THE ROLE OF EMOTIONAL INTELLIGENCE IN PREDICTING CAREER INDECISIVENESS AMONG COLLEGE STUDENTS

A Dissertation

by

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ABSTRACT

The study examined the role of emotional intelligence, personality traits and positive and negative affect in relation to career indecisiveness. The primary purpose was to investigate whether emotional intelligence could predict a significant proportion of incremental variance in career indecisiveness beyond the variance accounted for by the personality traits and positive and negative affect among male and female undergraduate university students across Colleges of Engineering and Education at a research one university in Southwest, USA**.** Data were collected from 582 participants who completed four survey questionnaires including the *Trait Emotional Intelligence Questionnaire-Short Form (TEIQue), Emotional and Personality-Related Career Decision-Making Difficulties Scale-Short Form (EPCD), Positive and Negative Affect Scale (PANAS)* and the *Big Five Inventory (BFI)*.

Hierarchical multiple regression analyses were conducted and the results revealed that emotional intelligence added a significant percentage of incremental variance in career indecisiveness compared to the variances explained by the personality traits and affectivity. The study also sought to investigate the moderation effect of gender and academic major on the prediction of career indecisiveness by emotional intelligence. A moderated moderation analysis revealed a significant three-way interaction effect of gender and academic major on the prediction of career indecisiveness by one of the emotional intelligence dimensions, self-control. According

to the results, significant proportions of variance in career indecisiveness were predicted by self-control for men in engineering, men in education, and women in education. However, for women in engineering, self-control could not significantly predict career indecisiveness. The results were thoroughly discussed, implications for practice were explained and future research ideas were suggested.

DEDICATION

Dedicated to the lovely people of College Station who made me feel at home during my five years of stay in the USA.

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Contributors

This work was supervised by a dissertation committee consisting of Professor Fredrick M. Nafukho and Professor Helen Muyia of the Department of Educational Administration and Human Resource Development, Professor Ramona Paetzold of the Management Department and Professor Ben Zoghi of the Engineering Technology and Industrial Distribution Department

All work for the dissertation was completed independently by the student.

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NOMENCLATURE

EI	Emotional Intelligence
EPCD	Emotional and Personality-related Career Decision-Making Difficulties
BFI	Big Five Inventory
PANAS	Positive and Negative Affect Scale
TEIQue	Trait Emotional Intelligence Questionnaire

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CHAPTER I

INTRODUCTION

Career decision-making is one of the most challenging stages of life for the young adults who are preparing to join the workforce as they often "struggle to plan their professional future in the face of practically endless possibilities they can realize" (Gati & Levin, 2014, p. 98). Such difficulties are experienced by a wide range of individuals, including college students, who have already made a choice on their major (Gati & Tal, 2008; Super 1980). The research into college students' career decision-making suggests that even senior students do not necessarily believe that their "undergraduate degree binds them to a related career" (Lichtenstein, et al., 2009, p. 228). As Lichtenstein, et al. (2009) further explained:

> Throughout the undergraduate years, students continue to struggle with *career* decisions—not merely job decisions— often contemplating professional options with no direct relationship to their undergraduate major. For example, a student with a pre-med degree might choose a graduate program in law while a student with an engineering degree might choose a job in investment banking. Students can wrestle with job and career decisions late into their senior year—and beyond (p. 228).

As a well-researched topic in career psychology, career decision making difficulties are defined as "the difficulties encountered by individuals while making career related decisions. (They) refer(s) to all problems and challenges that need to be

addressed prior to, during, or after the decision-making process" (Saka, Gati & Kelly, 2008, p. 403). In a broad sense, career decision-making difficulties are categorized as either temporary and developmental, or chronic, long lasting and pervasive.

Temporary and developmental difficulties, which are often called *career indecision,* are experienced by many college students and are part of the normal development process. *Career indecision* is not a sign of personality problems and is usually resolved easily by the individuals themselves or with the help of career counselors. The second category, which is often referred to as *career indecisiveness*, is an aspect of "more chronic and pervasive difficulties, mainly stemming from emotional problems or personality-related characteristics" (Gati et. al., 2010). Indecisive individuals may have identity conflicts, anxiety about decision-making and dependence on other's approval when making decisions. According to Salomoneh (1982), these individuals are unable to "make a vocational choice no matter how carefully they are led through a decision-making process" (p. 498).

Given the fact that the sources of career decision-making difficulties are diverse, several assessment tools have been created to diagnose the type of career decision-making difficulties among individuals. For instance, Gati et al. (1996) created a taxonomy of career decision-making difficulties with three major clusters including *Readiness, Lack of information* (about the career decision-making process itself, the self, occupations or majors, and ways of obtaining additional information and help) and *Difficulties related to inconsistent information* (unreliable information, internal conflicts, and external conflicts).

Career indecisiveness is the focus of one of the CDDQ dimensions (under *Readiness* category), but the dimension "does not indicate the specific issues that contribute to its prevalence" (Gati &Levin, 2014, p. 101). To identify these issues, Saka et al., 2008 introduced a taxonomy of the possible sources of career indecisiveness that "integrat(ed) previously identified prominent emotional and personality-related factors underlying indecisiveness" (Gati & Levin, 2014, p. 101). It is referred to as the *Emotional and Personality –related Career Decision-Making Difficulties (EPCD) and* includes 11 categories grouped into three major clusters (*Pessimistic Views, Anxiety, and Self-Concept and Identity*).

The Role of Emotions Affects and Personality Traits in Predicting Career Decision-Making Difficulties

Individual characteristics could predict career decision-making difficulties. According to Walsh and Osipow (1988), traits make people act differently in "the manner in which decisions are approached, responded to, and engaged in" (p. 21). According to a recent meta-analysis study, there is a statistically significant relationship between the five-factor traits (Neuroticism, Agreeableness, Conscientiousness, Extraversion, and Openness) and career decision-making difficulties, with neuroticism having the highest positive correlation and consciousness having the highest negative correlation with career decision-making difficulties (Martincin & Stead, 2015).

People's emotions affect the process of career decision-making as well. Emotions work in close cooperation with the cognitive system involved in the decision-making

process, and their adaptive use can lead to decisions that would bring more satisfying results (Emmerling & Cherniss, 2003). As Emmerling and Cherniss (2003) noted:

> Emotions experienced during the career decision-making process may influence the number of career options under consideration, tolerance for risky career decisions, the amount and kind of self-exploration individuals will engage in during the choice process, how much effort to invest in the process, and how information related to career choice is processed" (p. 154).

The adaptive use of emotions, or being aware of one's emotions and being able to express them appropriately and regulate them constructively to assist the thought process, is generally referred to as emotional intelligence (Mayer & Salovey, 1997). Although there are several EI models in the literature, two mainstream approaches to EI are recognized depending on the type of measurement used in a model (Petrides & Furnham, 2000, 2003). *The ability EI* is conceptualized as cognitive-emotional abilities in the domain of intelligence, measured through performance-based tests like IQ. *Trait EI* "concerns emotion related dispositions and self-perceptions measured via self-report" assessment tools (Petrides, Pita, & Kokkinaki, 2007, p. 273).

Theory of *trait EI* (Petrides & Furnham, (2001)"posits that individuals differ in the extent to which they attend to, process, and utilize affect-laden information of an intrapersonal (e.g., managing one's own emotions) or interpersonal (e.g., managing others emotions) nature" (Petrides, 2009, p. 10). Petrides and Furnham's model of *trait EI* includes 15 facets within four interrelated factors of Well-being; Self-Control; Emotionality; and Sociability.

In addition to emotions, affects may also influence career decision-making. Affects and emotions are distinct from each other. While emotions are conceptualized as "response tendencies that unfold over relatively short time spans", affects are often more long lasting, and experienced more consistently (Fredrickson, 2001, p. 219). The other distinction is that emotions are direct responses to certain trigger events, but affects are free-floating and far from being reactions. Finally, unlike emotions, which fit into various categories, affects vary along two dimensions, either positive or negative (Fredrickson, 2001).

Watson, Clark, and Tellegen (1988) defined positive and negative affect as follows:

> Positive Affect (PA) reflects the extent to which a person feels enthusiastic, active, and alert. High PA is a state of high energy, full concentration, and pleasurable engagement, whereas low PA is characterized by sadness and lethargy. In contrast, Negative Affect (NA) is a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness, with low NA being a state of calm- ness and serenity (p. 1063).

There is a large body of literature stating that affect influences the decision-making process (Johnson & Tversky, 1983; Clore, Schwarz, & Conway, 1994; Nygren, Isen, Taylor, & Dulin, 1996). When making a judgement, individuals use their affective state to evaluate the situation and reach an opinion. When happy, "individuals tend to overestimate the likelihood of positive and to underestimate the likelihood of negative

outcomes and events, whereas the reverse holds for individuals in a sad mood" (Schwarz, 2000, p.434). As it is extremely difficult to exclude pre-existing affects when making a judgment, it is very likely that individuals' evaluation of any target be different depending on whether they are in a happy or sad mood (Schwarz, 2000).

Statement of the Problem

Several studies have empirically examined the role of emotional intelligence in predicting career decision-making difficulties. Based on their findings, it seems that emotional intelligence dimensions account for a significant proportion of variance in developmental career decision- making difficulties (*career indecision*) among male and female high school and college students (Di Fabio, Palazzeschi, & Bar-On, 2012; Di Fabio & Palazzeschi, 2009, Puffer, 2011, Di Fabio, et. al., 2013, Di Fabio & Saklofske, 2014). However, the role of EI especially among college students in career indecisiveness is unclear due to the scarcity of empirical evidence.

While emotional intelligence should have a role in predicting career decisional difficulties, the incremental validity of EI or the value it adds in predicting a criterion over and beyond rival predictors such as personality traits is an important consideration, which is usually neglected. There is an ongoing debate in the EI literature stating that there are overlaps between EI and personality traits arguing that the significant variances associated with EI, are actually generated by personality traits (Cote 2014, Kluemper, 2007). Unless the personality traits are controlled for, it would be difficult to rule out the rival hypothesis that the variance observed in any criterion was actually generated by emotional intelligence.

We know from large body of literature that not only emotions but also affects influence decisions. When making a judgment, individuals use their affective states to evaluate the situation and reach an opinion (Johnson & Tversky, 1983; Clore, Schwarz, & Conway, 1994; Nygren, Isen, Taylor, & Dulin, 1996). As it is extremely difficult to exclude pre-existing moods or affects from emotions, it won't be possible to identify the proportion of variance associated to emotional intelligence unless positive and negative affect are built in the research design and controlled for.

The performance of male and female college students across different academic majors on emotional intelligence tests varies. For instance, Petrides and Furnham's measure of EI (TEIQue) yielded gender differences, as emotion regulation and stress management scores were significantly higher for males while relationships and empathy scores were lower (Petrides, 2009). Schutte's measure of EI is also sensitive to gender, as women scored significantly higher than men (Schutte et al., 1998). There are also studies suggesting that there are differences between the performances of students from various academic majors on emotional intelligence tests. For example, a study revealed that education major students scored higher in total trait EI than technical major students (Perez & Castejon, 2005, as cited in Sanchez-Ruiz, Perez-Gonzalez and Petrides (2010). In another research, it was reported that "psychology students scored higher on trait EI than computer science, electrical engineering, and business and management students" (p. 658). (Sanchez-Ruiz, Perez-Gonzalez & Petrides, 2010). Therefore, gender, academic major and the interaction of the two might have an intervening effect on predicting

career indecisiveness with emotional intelligence among male and female college students of different majors.

Purpose of the Study

The purpose of this study was to examine the role of emotional intelligence in predicting *career indecisiveness* among a sample of male and female college students of engineering and education majors after controlling for the personality traits and positive and negative affect. It also explored the moderating effect of gender (male vs. female), academic major (engineering vs. education) and the interaction of the two on the ability of EI to predict career indecisiveness.

Research Questions

The following research questions guided the study:

1. Does Emotional Intelligence Total have the ability to predict a significant proportion of variance in Career Indecisiveness Total after controlling for personality traits and positive and negative affect?
2. Does Emotional Intelligence Total have the ability to predict a significant proportion of variance in the facets of career indecisiveness including *Anxiety, Pessimistic Views* and *Self-Concept and Identity*, after controlling for personality traits and positive and negative affect?
3. What is the moderating effect of academic major on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?
4. What is the moderating effect of gender on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?

5. What is the three-way interaction effect of gender and academic major on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?

Significance

This study has significant implications for career counselors, educators and policy makers who seek ways to better facilitate the career decision-making process for individuals. The importance of deciding on the future career cannot be overestimated as few other decisions influence a person's life as much as career decisions do. According to Di Fabio, Palazzeschi, and Bar- On (2012)," the ever-increasing rate of developments, innovations, and changes in the workplace contributes to increased job mobility from one place of employment to another throughout one's lifetime" (p. 118). The inability to handle the process of career decision-making and the entire emotional pressure associate with it could be life wasting. Assisting individuals with career decision-making difficulties has important social and economic benefits including higher levels of workplace productivity, decreased unemployment and turnover rates, enhanced skills in human capital, expanded social and professional networks, and improved efficiency of education funds (Hooley & Dodd, 2015).

Evaluating the emotional and personality- related aspects of career decision-making difficulties could assist career counselors in providing appropriate interventions for each case. If a client is diagnosed with career indecisiveness, the issues cannot be resolved through typical consultations offering information on different possible career paths and decision-making strategies (Gati & Levin, 2014). The types of career decision-

making difficulties that stems from lack of emotional skills will not be solved through cognitive methods traditionally employed in career counseling sessions.

The growing interest in the emotional intelligence construct originates from the fact that EI can be increased through appropriate training (Bar-On, 1997, 2002; Mayer & Salovey, 1997). Thus, EI interventions have a promise to assist individuals in the transition from the state of bewilderment, self-doubt, anxiety and pessimistic views towards the ability of making better career decisions, leading them to long-lasting satisfaction in personal and professional lives.

Conceptual Framework

Trait Emotional Intelligence

This study incorporates Petrides and Furnham's (2001) theory of *trait emotional intelligence*. *Trait emotional intelligence* is "a constellation of emotion-related self-perceptions located at the lower levels of personality hierarchies (Petrides, 2009, p. 12) and refers to the "extent to which (individuals) attend to, process, and utilize affect-laden information of an intrapersonal (e.g., managing one's own emotions) or interpersonal nature (e.g., managing others emotions)" (Petrides, 2009, p. 10). Through a process of evaluation and content analysis on the salient models of EI and "cognate constructs, including personal intelligence, alexithymia, affective communication, emotional expression and empathy" (Petrides, 2009, p. 13), Petrides and Furnham (2001) identified a number of facets encompassed in these constructs and synthesized them into a guiding framework called *trait emotional intelligence*. *Trait EI* includes 15 facets within four interrelated factors of "Well-being (traits pertaining to dispositional mood); Self-Control

(traits pertaining to the regulation of emotions and impulses); Emotionality (traits pertaining to the perception and expression of emotions); and Sociability (traits pertaining to the interpersonal utilization and management of emotions)" (Petrides, 2009, p. 12).

Career Indecisiveness

Relying on the results of several studies that examined the role of various personality and emotional factors in career indecisiveness, Saka, Gati and Kelly (2008) proposed an integrative theoretical framework for describing *career indecisiveness* and its underling factors. Saka, Gati and Kelly's (2008) framework for career indecisiveness, which is referred to as the *Emotional and Personality Career Difficulties (EPCD)*, has informed this study. It consists of four clusters including pessimistic views, anxiety, and Self-Concept and Identity clusters.

The first cluster, Pessimistic Views, is an inclination to focus on the downside of the situations and consists of three categories including pessimistic views about the process, pessimistic views about the world of work, and pessimistic views about the individual's control. The second cluster, Anxiety, consists of four types: anxiety about the process of career decision-making, anxiety about the uncertainty involved in choosing, anxiety about the choice, and anxiety about the outcomes. The last cluster, Self-Concept and Identity, focuses on the "difficulties in forming a stable, independent personal and vocational identity and a positive self-concept (Saka, Gati, & Kelly, 2008, p. 407). It includes four categories of self–esteem, general anxiety, uncrystallized identity and conflictual attachment and separation (Saka, Gati, & Kelly, 2008). General

anxiety is included it in this cluster and not in the cluster of anxiety based on the notion that "general anxiety is a broader and more stable personality trait rather than an emotion connected with the process involved in making a specific decision" (Saka, Gati, & Kelly, 2008, p. 408). Each category is described in detail in Chapter 2. Figure 1 describes the conceptual framework.

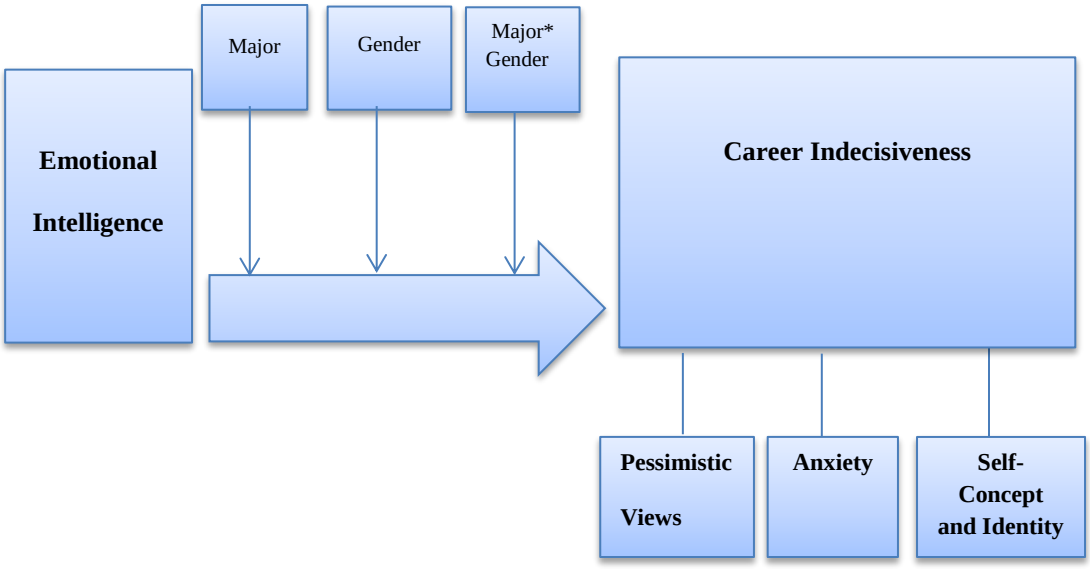

Figure 1. Conceptual Framework.

Emotional and Personality Career Difficulties (EPCD) is grounded on Bandura's theory of self-efficacy (1977) and Super's (1953) theory of self-concept in career development. According to Bandura (1994) "self-efficacy influences the choices (that the individuals) make, their aspirations, how much effort they mobilize in a given endeavor, how long they persevere in the face of difficulties and setbacks, and the amount of stress they experience in coping with taxing environmental demands" (p.

181). Based on Super's (1953) theory of self-concept, "career choice is an expression of the individual's self-concept and self-esteem plays a central role in actualizing one's self concept (Chartrand, Robbins, Morrill, & Boggs, 1990), as people tend to choose careers that will allow them to actualize their self-concept and fulfill their sense of self- worth" (Saka, Gati, & Kelly, 2008, p. 407).

Operational Definitions of the Key Terms

Trait Emotional Intelligence (EI)

Used in this study to refer to "a constellation of emotion-related self-perceptions located at the lower levels of personality hierarchies" (Petrides, 2010, p. 137). Trait EI "posits that individuals differ in the extent to which they attend to, process, and utilize affect-laden information of an intrapersonal (e.g., managing one's own emotions) or interpersonal nature (e.g., managing others emotions)" (Petrides, 2009, p. 10).

Trait Emotional Intelligence Questionnaire (TEIque)

Used in this study to refer to a scientific measurement instrument to evaluate emotional intelligence based on the trait EI theory.

EI Total

Used in this study to refer to the total score obtained from the TEIQue scale of emotional intelligence.

Career Indecisiveness

Used in this study to refer to pervasive and long-lasting career decision-making difficulties, which are not part of the normal developmental process, have emotional and

personality-relate underlying factors and "impede the career decision-making process for longer periods of time"(Gati & Levin, 2014, p. 101)**.**

Emotional and Personality Related Career Decision-Making Difficulties (EPCD)

Used in this study to refer to a taxonomy and scale of career indecisiveness developed by Saka, Gati, and Kelly (2008).

EPCD Total

Used in this study to refer to the total score obtained by the participants from the EPCD scale.

Pessimistic Views

Used in this study to refer to a cluster of *EPCD*, which includes (1) pessimistic views about the decision-making process, (2) pessimistic views about the world of work, and (3) pessimistic views about one's control over the decision-making process and its outcome (Saka, Gati, & Kelly, 2008).

Anxiety

Used in this study to refer to the a cluster of *EPCD* which includes (1) anxiety about the process of career decision-making, (2) anxiety about the uncertainty involved in choosing, (3) anxiety about making a commitment to one's choice, and (4) anxiety about the outcome of the career decision-making process (Saka, Gati, & Kelly, 2008).

Self-Concept and Identity

Used in this study to refer to a cluster of EPCD, which includes (1) general trait anxiety, (2) low self-esteem, (3) uncrystallized identity and (4) conflictual attachment and separation in the career decision-making process (Saka, Gati, & Kelly, 2008).

Big Five Personality traits

Used in this study to refer to the five main personality traits including Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to experience (John, Naumann, & Soto, 2008).

Positive Affect

Used in this study to refer to "the extent to which a person feels enthusiastic, active, and alert. High PA is a state of high energy, full concentration, and pleasurable engagement, whereas low PA is characterized by sadness and lethargy" (Watson, Clarke, & Tellegen, 1988, p. 1063).

Negative Affect

Used in this study to refer to " a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness, with low NA being a state of calmness and serenity" (Watson, Clarke, & Tellegen, 1988, p. 1063).

Academic Major

Used in this study to refer to engineering or education undergraduate majors.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this section is to provide an overview on the career decision-making literature, the construct of emotional intelligence, personality traits, and positive and negative affects. It also reviews the previous empirical studies on the role of EI in predicting career decision-making and discusses the existing gaps in the literature.

Career Decision-Making

The Early Stages

Career decision-making has been a concern for individuals long before career development theories emerged. A review on the early career literature reveals that the question of what career to pursue dates back to Plato's era. At that time, individual involved in a variety of methods to find the occupation that was the "wise choice" for them. This question was presented to a wide variety of experts of the time, "including graphologists, palmists, phrenologists, and other diviners of predetermined forces" (Phillips & Pazienza, 1988, p. 2).

Career counseling rose in the 20th century and criticisms and warnings were made against engaging in "pseudoscience" to identify the right career path instead of using rationality and cognition. Parr (1937) demonstrated the falsehood of astrological predictions using empirical data and Kitson (1929) called for thoughtful information gathering and rational analysis to choose a career instead of relying on pseudoscience. The very first systematic method of career assessment was offered by Parsons (1909)

who argued that a wise choice consisted of three elements: (1) a clear understanding of oneself, (2) knowledge of the determinants of success in different careers, and (3) an accurate reasoning on the relationship between these two factors.

Parson's model as well as several other advanced models, which appeared later thanks to theoretical and technological sophistications in psychology, all shared a common feature. They had a deterministic view over individuals and perceived career decision-making as an isolated event. The process of decision-making, as well as the antecedents and consequences of a decision were all left out of these models and the focus was on *what* to choose rather *how* the choice is made. However, a movement gained momentum in 1919, which deviated from the content of a choice toward the process of choosing.

Scholars such as Brewer (1919) and Kitson (1929) criticized the conceptualization of career choice as a point-in-time phenomenon and emphasized "the adaptability of individuals in terms of their suitability for a number of occupations and their capacity for developing new interests and abilities as a function of their life experiences" (Walsh & Osipow, 1988, p. 3).

Emergence of Developmental Theories

Brewer (1919) was among the very first scholars who argued against "choice as a point-in-time phenomenon, and for an emphasis on vocational preparation, choice, entry and adjustment" (Phillips & Pazienza, 1988, p. 3). Similarly, Kitson (1929) argued that decisions are actively shaped by the decided people and change over time. He emphasized on "the adaptability of individuals in terms of their suitability for a number

of occupations and their capacity for developing new interests and abilities as a function of their life experiences" (Phillips & Pazienza, 1988, p. 3). The very first model of vocational development was that of Ginzberg, Ginsburg, Axelrad, and Herma (1951), who tried to discover how individuals make career decisions. They developed a three-stage model, which included:

> The *fantasy* stage, in which the process of choosing is conducted without attention to rational considerations; the *tentative* stage, characterized by advances in self-knowledge, time perspective and reality orientation; and the *realistic* stage, in which both subjective considerations and a greater awareness of external reality serve as the basis for choice" (Walsh & Osipow, 1988, p. 5).

This theory was criticized by Super (1953) for lack of substantial literature support, for its emphasis on preference rather than choice, and for neglecting the process through which self and reality compromise. However, it served as a foundation for the emergence of one of the most renowned vocational development theories by Super (1953). Super's theory discussed a continuous process of career development "characterized by a lifelong succession of stages" (Walsh & Osipow, 1988p. 5). He described the process as developing a self-concept and achieving a compromise between one's self-concept and reality and proposed that rather than a point-in-time phenomenon, career choice was a developmental process through which choices were evolved. He argued against the idea that a single occupation fits a person and believed that a range of occupations might be suitable for an individual (Super, 1953).

Super's (1953) theory of vocational development was influenced by Buehler's developmental psychology, which suggests that life consists of different stages in which individuals are supposed to perform tasks that are socially expected of them. The stages include *growth, exploration, establishment, maintenance,* and *decline* and are described as follows:

> During the *growth* stage (birth to approximately 14), the central activity is one of forming a picture of the self and an orientation to the world of work. *Exploration* (approximately ages 14 to 24) is characterized by increasing examination of self and of self-in-context. Various roles are tried out in fantasy and in reality, and provisional commitment to a particular occupational alternative is made. In the *establishment* stage (ages 25 to 44), effort is directed first toward any adjustment necessitated by the result of trial and second toward gaining a permanent position within the chosen occupation and advancing within that occupation. *Maintenance* (ages 45 to 64) is characterized by a shift from seeking to improve one's position to preserving that status which has been achieved. Finally, in the *decline* stage (age 65 and on), the individual is concerned with gradual disengagement from former work activities, and with seeking new roles to replace those formerly available in work (Phillips & Pazienza, 1988, p. 5-6).

Career decision-making occurs at the exploration stage where the person needs to "cope with the vocational developmental tasks of crystallization (understanding of one's interests, skills, and values), specification (making tentative and specific career choices),

and implementation (taking steps to actualize career choices through engaging in training and job positions)" (Leung, 2008, p. 120).

Career Decision-Making as a Process

The emerging perspective on career development, viewed career decision-making as a process containing a series of decisions to be made. Two approaches (*descriptive* vs. *prescriptive)* are identifiable in the literature explaining how career decisions are made. The *descriptive* models (e.g. Hilton, 1962; Fletcher, 1966; Tiedeman & O'Hara, 1963) focus on how decision are made and describe the sequence through which a person reached a decision. For instance, Harren (1979) presented a model of decision-making, which included four stages of awareness, planning, commitment, and implementation. The prescriptive models (e.g. Gelatt, 1962; Katz, 1963; Kaldor & Zytowski, 1969) try to portray the ideal decider by asking the question "How are decisions best made?" An example of these models is that of Gelatt (1962), who prescribed a method of decision-making based on the scientific method. According to this model decision-making involves gathering and using reliable information, assuming responsibility for the choice, and proceeding with the decision in a rationale and self-aware manner.

Conceptualization of Individual Differences in Career Decision-Making

Both *descriptive* and *prescriptive* models focused on defining a generic pattern for decision-making and ignored the role of individual differences (Walsh & Osipow, 1988). Edwards (1961) was among the very first scholars who criticized these models and emphasized the need for considering the individual differences in the career

decision-making process. In his approach the central question was: "Why do some deciders have more difficulty than others?"

The literature on the individual differences in the process of career decision-making has followed two paths. The first path examined the styles and strategies involved in the decision-making process (e.g. Dinklage, 1968; Jepsen, 1974; Johnson, 1978; Harren, 1979; Arroba, 1977). For instance, Arroba (1977) defined six styles of *logical*, *hesitant*, *no-thought*, *intuitive*, *emotional*, and *compliant* to describe different deciders where depending on the demands of situation, individuals switch among these strategies. Harren (1979) presented three styles of *rational*, *intuitive*, and *dependent* to describe different decision-makers.

The second path focused on the sources and types of decision-making difficulties individuals often face. This path was based on the notion that some individuals make better decisions and encounter fewer difficulties than others (e.g. Holland& Holland, 1977; Taylor & Betz, 1983; Heppner, 1978). Holland and Holland (1977) classified types of career indecision "ranging from the fairly superficial (e.g., lack of information) to the more pervasive and deep-rooted" (p. 23). Informed by Bandura's (1977) theory of self-efficacy, Taylor and Betz (1983) proposed that "individual differences in perceived ability to perform a task successfully may explain why some individuals have more difficulty in career decision making than others" (p. 23). Several empirical studies have supported the significance of the relationship between self-efficacy and career indecision (Betz & Voyten, 1997; Osipow & Gati, 1998; Taylor & Betz, 1983; Wulff & Steitz, 1999). Bandura's theory of self-efficacy centers around an individual's perception of his

or her competencies and abilities. This perception influences the choices that a person makes, his or her goals, the effort he or she spends to achieve them, his or her level of persistency at difficult times and the way they cope with the stress that is imposed by the environmental demands (Bandura, 1994).

The Assessment of Career Decision-Making

Although career decision-making has been historically important in the career development literature, the assessment of career decision-making is a relatively new topic. The very first studies used samples from college students and classified them as either decided or undecided. According to Slaney (1988), two main findings could be derived from these studies. First is the percentage of undecided students, which came to be as high as 20-30%, and the second is that undecidedness is not related to the students' grades or their academic aptitude (Baird, 1969). Both findings are significant because they indicate not only the prevalence of career decision-making difficulties among college students but also the fact that they are not sign of a problem. Rather, they are part of the normal development process leading to career selection (Slaney, 1988). In contrast, there was another set of studies, which demonstrated opposite findings. As Slaney (1988) explained:

> Undecided students have been described as being lower in self-esteem (Barrett & Tinsley, 1977; Resnick, Fauble, & Osipow, 1970), both lower in self-esteem and higher in dogmatism (Maier & Herman, 1974), overly sensitive, compulsive, and withdrawn (Watley, 1965), more external and fearful of success (Taylor, 1982), anxious (Galinsky & Fast, 1966; Hawkins, Bradley, & White, 1977; kimes &

> Troth, 1974; Walsh & Lewis, 1972), less inclined to take risks (Ziller, 1957), less self-directive (Marr, 1965), and more dependent (Ashby, Wall, & Osipow, 1966) (p. 35-36).

The two different sets of findings led to the development of two distinct approaches towards career decision-making difficulties. The first approach, which is often referred to as *career indecision*, involves a developmental perspective. It assumes that career decision-making difficulties are a part of the normal development process experienced by many individuals, are not a sign of personality problems, and are usually resolved easily by individuals themselves or with the help of career counselors (Walsh & Osipow, 1988). The second approach, which is often referred to as *career indecisiveness*, views decisional difficulties as "more chronic and pervasive difficulties, mainly stemming from emotional problems or personality-related characteristics" (Gati et. al., 2010). Indecisive individuals may have identity conflicts, anxiety about decision-making, and unable to "make a vocational choice no matter how carefully they are led through a decision-making process" (Salomoneh, 1982, p. 498). As Crites (1969) further explained:

> Indecision is specific to vocational choice and can usually be resolved by changing the conditions for decision-making, i.e., information about choice supply, incentive to choose, and freedom to choose, whereas indecisiveness is a more generalized personality attribute and persists even when the conditions for choice are optimal (p. 576).

Elaborating *career indecision* and *career indecisiveness*, Goodstein (1965) emphasized the role of anxiety as a diagnostic factor to differentiate the two. He argued that in case of career indecision, anxiety is the consequence of failing to make a career choice. Therefore, providing appropriate information would enable the individual to make a choice, which would alleviate the anxiety. However, in case of career intensiveness, anxiety is the antecedent of the indecision, forcing the individual to avoid the decision-making process. Thus, the career counseling sessions are not effective in solving the problem.

Measuring Career Indecision

Given the fact that the sources of career indecision are diverse, several taxonomies and assessment tools are created to measure them. The *Career Decision Scale (CDS)* is one of the earliest models that measured the antecedents of career indecision (Osipow, et. al., 1975). *CDS* is a 19 item scale with "16 items that describe vocational and/or educational indecision, 2 that describe career-decidedness and a final item that has a free response format so respondents can insert descriptions of their unique circumstances relative to career indecision " (Walsh & Osipow, 1988, p.46).

Another scale with a focus on career indecision is *My Vocational Situation Scale,* developed by Holland, Daiger and Power (1980). It was designed to serve as a diagnostic scheme for career decision making "based on the assumption that most difficulties in vocational decision-making fall into the following categories: (a) problems of vocational identity, (b) lack of information about jobs or training, or (c) environmental or personal barriers (Holland, Daiger &Power, 1980, p. 1). Vocational

identity is defined by the authors as having " a clear and stable picture of one's goals, interests, personality, and talents…which leads to untroubled decision making and confidence in one's ability to make good decisions in the face of inevitable environmental ambiguities" (Holland, Daiger & Power, 1980, p.1). The scale was created with the purpose of identifying the appropriate treatment for the person who encounters career indecision based on the source of difficulties.

Gati et al. (1996) proposed a taxonomy of career decision-making difficulties referred to as *Career Decision- Making Difficulties Questionnaire (CDDQ). CDDQ* includes three major clusters of *Readiness, Lack of information* (about the career decision-making process itself, the self, occupations or majors, and ways of obtaining additional information and help) and *Difficulties related to inconsistent information* (unreliable information, internal conflicts, and external conflicts). While many other measurement scales of career decision-making difficulties, such as the *CDS*, provide only a single score for individuals' indecision, "the CDDQ reveals various aspects of such difficulties (e.g., whether an individual's difficulties stem from a lack of knowledge about the decision-making process or dysfunctional beliefs that are hindering progress)" (Gati & Levin, 2014, p. 100).

Measuring Career Indecisiveness

One of the 10 *CDDQ* dimensions (under *Readiness* category) "measures clients' tendency for general indecisiveness; however, this category does not indicate the specific issues that contribute to its prevalence" (Gati & Levin, 2014, p. 101). Saka et al. (2008) introduced "a taxonomy of the possible sources of career indecisiveness that

integrated previously identified prominent emotional and personality-related factors underlying indecisiveness" (Gati & Levin, 2013, p. 101). The taxonomy is referred to as the *Emotional and Personality–related Career Decision-Making Difficulties (EPCD)* and includes 11 categories grouped into three major clusters (Pessimistic Views, Anxiety, and Self-Concept and Identity).

Pessimistic Views

According to Gati & Levin (2014), *Pessimistic Views* "involves the more cognitive facets of indecisiveness including pessimistic views about the decision-making process, pessimistic views about the world of work, and pessimistic views about one's control over the decision-making process and its outcome" (p. 101). Several aspects of *Pessimistic Views* have repeatedly found to be related with career indecision and indecisiveness (Saka, Gati, & Kelly, 2008). Pessimistic perceptions may appear in different ways in the process of career decision-making and include *Pessimistic views about the world, Pessimistic views about the individuals' control, and Pessimistic views about the decision-making process.*

Pessimistic views about the world are usually associated with "depression, hesitation, self-doubt, concentration difficulties, feelings of guilt and inferiority, and harsh self-criticism" (Saka, Gati, & Kelly, 2008, p. 405). These characteristics adversely influence the decision-making process in all life contexts including career decision-making (Saka, Gati, & Kelly, 2008). The world of work is characterized by ongoing change, and pessimistic individuals tend to focus on the negative aspects of change and the fears and difficulties involved. *Pessimistic views about the world* could make the

individuals unwilling to actively involve in the career decision-making process as they anticipate no rewarding outcome.

Pessimistic views about the individuals' control deals with how people perceive their control over their life events. Those with external locus of control attribute their life events to external factors such as luck and those with internal locus of control see factors such as their own ability or effort as the reason for what happens in their lives. Active and appropriate problem-solving and high levels of motivation are often seen in people with internal locus of control. However, those with external locus of control fall into the trap of indecision and indecisiveness. Failing to engage in investing in the decision-making process, they think that the results would be out of their control anyway (Saka, Gati, & Kelly, 2008).

The last factor, that is *Pessimistic views about the decision-making process* and its outcome, is related to individuals' self-efficacy in decision-making or their perception of their ability to succeed. Self-efficacy affects career decision-making as the individuals with low levels of self-efficacy avoid challenging career goals thinking that they would never be able to achieve them. This tendency limits their career options and leads to difficulties in defining preferences, planning and implementing a decision. The results of meta-analysis studies have established a link between self-efficacy and career indecision (Saka, Gati, & Kelly, 2008).

Anxiety

Anxiety has been repeatedly reported to be associated with career decisional difficulties. It is defined as "the negative ramifications of anxiety in career decision

making, including (a) *Anxiety about the process*, (b) *Anxiety about the uncertainty involved in choosing*, (c) *Anxiety about making a commitment to one's choice*, and (d) *Anxiety about the outcome*" (Gati, & Levin, 2014, p. 101).

The first type, *Anxiety about the process of career decision-making* usually happens prior to the process and can be triggered by perfectionism. The second type, *Anxiety related to the uncertainty in career decision-making*, involves fear of the unknown future, the ambiguous nature of decision-making, and the state of being undecided. The third type, *Anxiety about the process of choosing*, is comprised of "perfectionism about choosing, fear of losing other potentially suitable options, fear of choosing an unsuitable occupation and anxiety about one's responsibility for the act of choosing" (Saka, Gati, & Kelly, 2008, p. 407). Finally the *Anxiety about the outcome* type focuses on the consequences of making a career decision, which could be the fear of failure (Saka, Gati, & Kelly, 2008).

Self-Concept and Identity

The third cluster, Self-Concept and Identity, is "consistently found to be associated with career decisional difficulties and involves troubles in forming a stable, independent personal and vocational identity and a positive self-concept" (Saka, Gati, & Kelly, 2008, p. 407). These difficulties appear as a result of psychological issues related to separation from family and independence. The cluster includes *Self–esteem, Trait anxiety*, *Uncrystallized identity* and *Conflictual attachment and separation* which all have been identified to be associated with career decision-making difficulties in several studies (Saka, Gati, & Kelly, 2008).

Self-esteem has been repeatedly reported to be negatively associated with career indecision and indecisiveness (Saka, Gati, & Kelly, 2008). Based on Super's (1953) theory of self-concept, "career choice is an expression of the individual's self-concept and self-esteem plays a central role in actualizing one's self concept (Chartrand, et al., 1990), as people tend to choose careers that will allow them to actualize their self-concept and fulfill their sense of self- worth" (Saka, Gati, & Kelly, 2008, p. 407). *Trait anxiety* in this cluster is distinguished from career decision-making anxiety that was discussed in the previous cluster. It is perceived as a broader personality trait that could manifest itself in any context and is consistently reported to be correlated with career indecision (Saka, Gati, & Kelly, 2008). *Uncrystallized identity* refers to "an uncrystallized and unstable vocational self-concept, which prevents the individual from expressing clear vocational preferences, interests, aspirations and career goals" (Saka, Gati, & Kelly, 2008, p. 408). Finally, the *Conflictual attachment and separation* involves the role of the significant other in the career decision-making process and stems from either excessive criticisms, lack of satisfaction or support expressed by the significant other or an intense need felt by the decision maker to gain their approval and make them pleased. It involves feelings of conflict, guilt and anxiety, which adversely affect the decision-making process (Saka, Gati, & Kelly, 2008).

Emotions and Career Decision-Making

Traditionally, individuals were advised to avoid emotions from the decision-making process based on the assumption that a good decision is made through the cognitive system. However, in the recent years research results have demonstrated the

contrary. In fact, there is strong empirical evidence suggesting, "emotions are integrally linked with more cognitive systems involved in decision-making and may actually produce better, not worse, decisions" (Emmerling & Cherniss, 2003, p. 154).

In a neuroscientific study, a group of normal individuals were compared with a group with bilateral damage to the prefrontal cortices on a gambling task, which involved making a series of decisions. The damage was associated with incompatibilities in emotional responding, yet normal cognitive functioning. The results revealed that members of the group with prefrontal damage had difficulties in decision-making and could not identify the advantageous behavior. Identifying the advantageous behaviors required emotional clues as the individuals needed to know affective outcomes of each choice or how they would make them feel, if selected (Emmerling & Cherniss, 2003).

As discussed earlier, career decision-making is not a point-in-time phenomenon. Rather, it involves making a series of decisions directly or indirectly influenced by the emotional mind. As Emmerling and Cherniss (2003) noted:

> Emotions experienced during the career decision-making process may influence the number of career options under consideration, tolerance for risky career decisions, the amount and kind of self-exploration individuals will engage in during the choice process, how much effort to invest in the process, and how information related to career choice is processed" (p. 154).

Therefore, the ability to use emotions adaptively is crucially important for making career choices. Difficulties with adaptive use of emotions are likely to affect individuals' career decision making abilities as the individuals fail to correctly evaluate

the emotional outcomes of different choices (Emmerling & Cherniss, 2003). The adaptive use of emotions or the abilities "to accurately perceive emotions, to access and generate emotions so as to assist thoughts, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (Mayer & Salovey, 1997, p. 5) are generally referred to as emotional intelligence (EI). Thus, high levels of EI may assist individuals to better manage their emotional mind when making career decisions.

Emotional Intelligence

Origin, Definition, and Models

For hundreds of years, emotions were downgraded in favor of cognition and viewed as distractive elements in human nature, which blur the individuals' minds and deceive them with inaccurate data (Salovey et al., 2000). However, contemporary theories of psychology moved away from this notion, emphasizing that in fact emotions "provide individuals with important information about their environment and situation. This information shapes the individuals' judgments, decisions, priorities and actions" (Salovey et al., 2000, p. 506).

Emotional intelligence was conceptualized based on the notion that emotion and cognition together lead to a person's success (Salovey & Mayer, 1990) and that success was dependent on "one's ability to reason about emotional experiences and other affect-laden information, and to respond in emotionally adaptive ways to the influences drawn by reason about one's situation, prospects, and past" (Salovey et al., 2000, p. 506). Salovey and Mayer (1990) defined emotional intelligence as:

> … the capacity to reason about emotions and of emotions to enhance thinking. It includes the abilities to accurately perceive emotions, to access and generate emotions so as to assist thoughts, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth (Salovey &Mayer (1990, p. 5).

Based on Salovey and Mayer's definition, emotional intelligence represents a type of problems solving that involves emotions (Cote, 2014). Taking a broader approach, Bar-On (2006) defined emotional and social intelligence as "a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands" (p. 372).

In a review over 15 years of emotional intelligence history, Fernandez-Berrocal and Extremera (2006) identified three major theoretical models of EI in the literature. These models include: *The EI ability* by Mayer and Salovey (1990; 1997), *Bar-On's Emotional – Social Intelligence* (1997), and Goleman's *Emotional Competencies* (Goleman, 1998; 2001).

Leading Models of Emotional Intelligence

The EI ability-based Model

In 1990, Salovey and Mayer published the very first scholarly paper on emotional intelligence. Salovey and Mayer's original model comprised three conceptually related processes involving emotional information: (a) the appraisal and expression of emotion (in self and others), (b) the regulation or control of emotion (in

self and others), and (c) the utilization of emotion in adaptive ways. Later in 1997, they revised this model and strictly constrained it to a cognitive ability, which was different from social and emotional personality traits. Mayer and Salovey's revised model was comprised of four abilities: (a) perceive emotions; (b) use emotion to facilitate thought; (c) understand emotions, and (d) manage emotions.

The first branch, ability to perceive and express emotion, describes people who are aware of their own emotions as they occur and are able to express them appropriately to others through verbal and non-verbal means. This ability is the basis for effective communication and interpersonal relationships in life. The deficiency in this domain, that is a kind of reluctance to express emotions due to either inability to do so or fear of the possible consequences, usually results in anxiety and depression (Emmons & Colby, 1995).

The second branch, using emotions to facilitate the thought process, is the functional aspect of Emotional Intelligence. Emotions can be used to draw one's attention to think more carefully about an issue of concern, enabling a person to choose the option that could make them feel better (George & Brief, 1996).

The third branch; understand emotions, deals with understanding both the detriments and consequences of emotions and the process through which they change. For example an emotionally intelligent leader knows that fear and anxiety are natural initial responses to a proposed change in the organization (George, 2000).

The final branch, manage emotions, is more proactive. It involves managing both the emotions of oneself and that of others. This is the ability to be self-reflective by

maintaining positive moods and alleviating the negative ones. Being able to influence how other people feel is an important interpersonal skill. An example could be a leader who has the ability to make the subordinates happier and more motivated when they talk (George, 2000).

Mayer and Salovey argued in several papers (e.g., Mayer & Salovey, 1997; Mayer et al., 2001) that EI is a kind of intelligence with four important features: It correlates moderately with cognitive intelligence; it enables one to reason about emotions; it develops over time; and finally, it can only be measured through performance-based tests, not self-reports. Based on these assumptions, Mayer, Salovey, and Caruso (2000) developed their test of emotional intelligence called *Mayer-Salovey-Caruso Emotional Intelligence Test* or *MSCEIT* to measure emotional intelligence. *MSCEIT* comprises of a series of questions each having one correct answer, and does not overlap with measures of personality traits like Big Five (Mayer, Salovey, & Caruso, 2004).

Bar-On's emotional-social intelligence model

Bar-On's model of Emotional Intelligence is more expansive compared to that of Mayer and Salovey. Bar-On (1997) conceptualized emotional intelligence as a "cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands" (p. 372). This model was based on an exhaustive review on determining personality factors of success beyond cognitive intelligence. It is consisted of five domains: (a) *Intrapersonal skills* (b) *Interpersonal*

skills; (c) *Adaptability*; (d) *Stress management*; and (e) *General mood* (Fernandez-Berrocal &Extremera, 2006). Bar-On (2000) developed the EQ-i measurement tool to assess emotional intelligence. EQ-i contains 133 self-report items and covers a wide range of social, emotional, cognitive and personality dimensions.

Goleman's Competency Model of Emotional Intelligence

Emotional Intelligence owes its popularity to Daniel Goleman's writings. In his first book, *Emotional Intelligence*, Goleman discussed the influence of EI in people's lives (Goleman, 1995). Goleman's (1995) model is structured based on five broad areas including: (a) *Knowing one's emotions*, (b) *Managing emotions*, (c) *Motivating oneself*, (d) *Recognizing emotions in others*, and (e) *Handling relationships*. Goleman's model moved away far beyond Salovey and Mayer's conceptualization of EI and represented what we generally call *character* as emotional intelligence. He made extraordinary claims on the predictive ability of EI stating that it accounted for 80% of success in personal, academic and professional success, while IQ contributes to only 20%, at best (Goleman, 1995). However, he encountered serious criticisms from the pioneers of EI research who argued that the existence of such a comprehensive quality is irrelevant. As Mayer, Salovey, and Caruso (2004) stated, "If there were truly a single psychological entity that could predict widespread success at such levels, it would exceed any finding in a century of research in applied psychology" (p. 90).

Categorization of EI Models

Ability vs. Mixed

According to Mayer et al (2000), EI models are of two types based on the

elements they are hypothesized to encompass. The *Ability* EI focuses on emotions and their interaction with cognition. It is conceptualized as a kind of cognitive ability in the domain of intelligence that meets three empirical criteria. First, it is measured through performance-based tests with right or wrong answers. Second, it correlates with other measures of cognitive ability such as IQ, and third, it increases by age (Mayer, Salovey & Caruso, 2004). Mayer and Salovey's (1997) model is the most renowned example of the *ability* EI.

The *Mixed* models of EI are fundamentally different from the ability models because they combine cognitive abilities with non-ability traits such as personal independence, self-regard, and positive mood. Bar-On's (1997) and Goleman's (1995) models fall under the category of the *mixed* models.

Trait EI vs. Ability EI

Petrides and Furnham (2001) categorized EI models based on the method of measurement applied. They highlighted an important conceptual distinction between *trait EI* and *ability EI.* They defined *trait EI* as personality-related self-perceived abilities measured through self-reports and ability EI as cognitive-emotional abilities that needed to be measured through performance-based tests. According to their theory, *trait EI* was conceptualized in the framework of personality, while ability EI belonged to the psychometric intelligence domain. Bar-On's and Goleman's models are both categorized under *trait EI,* while Mayer and Salovey's model is considered *Ability EI.*

The Fallacy of Ability EI

Petrides (2009) believe that EI cannot be a cognitive ability, because as ability, it needs to be measured through performance-based tests with objective scoring systems. This caused difficulties due to the "subjective nature of emotions that cannot be artificially objectified in order to be made amenable to IQ-type scoring" (Petrides, 2009, p. 11).MSCEIT is the most renowned example of ability EI with a performance-based system and excellent reliability and validity records. However, it incorporates awkward scoring procedures. As Petrides (2009) noted:

> These procedures yield scores that are not only foreign to cognitive ability, but also psychologically meaningless, as it is unclear whether they reflect confounding with vocabulary size (Wilhem, 2005), or conformity to social norms (Matthews, Emo, Roberts, & Zeidner, 2006), or theoretical knowledge about emotions (Brody, 2004), or stereotypical judgement (O'Sullivan, 2007), or some unknown combination, or interaction, of some, or all of these factors (p. 11).

Theory of Trait EI

Petrides and Furnham (2001) conceptualized emotional intelligence as "a constellation of emotion-related self-perceptions located at the lower levels of personality hierarchies….outside the realm of human cognitive ability" (Petrides, 2009, p. 12). Based on their conceptualization, EI refers to the "extent to which (individuals) attend to, process, and utilize affect-laden information of an intrapersonal (e.g., managing one's own emotions) or interpersonal nature (e.g., managing others emotions)" (Petrides, 2009, p. 10). Through a process of evaluation and content analysis

on the salient models of EI and "cognate constructs, including personal intelligence, alexithymia, affective communication, emotional expression and empathy" (Petrides, 2009, p. 13), Petrides and Furnham (2001) identified a number of facets encompassed in these constructs and synthesized them into a guiding framework called *trait emotional intelligence.* Petrides (2009) explained the process as follows:

> The rationale was to include core elements common to more than a single model, but exclude peripheral elements appearing in only one specific conceptualization. This is analogous to procedures used in classical psychometric scale development, whereby the commonalities (shared core) of the various items comprising a scale are carried over into a total score, with their random or unique components (noise) being cancelled out in the process (p. 13).

Using such a comprehensive sampling domain they developed a test of EI called *Trait Emotional Intelligence Questionnaire (TEIQue),* which was designed to address the limitations that exist in majority of EI tests, even those popular in academia and business (e.g., Bar-On's EQ-i; Wong & Law's WLEIS; Schutte's scale). Majority of self-report measures of EI are based on the misconception that abilities, competencies and skills can be measured through self-report measures, while psychometrically speaking, self-report tools can only measure self-perceptions. Additionally, they encompass an inadequate coverage of the construct of EI. That is, they exclude crucial facets of emotional intelligence such as Emotion Expression, Emotion Perception, and Emotion Regulation and include some unrelated facets to both emotion and intelligence such as Reality Testing and Independence (Petrides & Furnham, 2001).

Trait Emotional Intelligence Questionnaire (TEIQue) offers a comprehensive coverage of the emotional aspects of personality and provided "a complete, one-to-one coverage of the construct's sampling domain, (and) have a clear and stable four-factor structure" (Petrides, 2009, p. 72).

According to Wilhelm (2007), among the other available self-report measures of EI, TEIQue "seems to be the most promising candidate in terms of available evidence and effort in validating the measure" (p. 135). The ability of TEIQue to better predict criteria compared to other EI instruments has been demonstrated in several independent studies (e.g., Freudenthaler, Neubauer, Gabler, & Scherl, 2008; Martins, Ramalho, & Morin, 2010). The construct has also demonstrated incremental validity over both the Giant Three and the Big Five Personality scales (e.g., Kluemper, 2008; Petrides, Frederickson, & Furnham, 2004; Saklofske, Austin, & Minski, 2003; Van der Zee & Wabeke, 2004).

TEIQue is comprised of 15 facets within four interrelated factors. Table 1 contains the factors, their associating facets, and meanings. Petrides (2009) explained the four factors as follows:

> *Well-being* (traits pertaining to dispositional mood), *Self-control* (traits pertaining to the regulation of emotions and impulses), *Emotionality* (traits pertaining to the perception and expression of emotions) and *Sociability* (traits pertaining to the interpersonal utilization and management of emotions) (p. 12).

Big Five Personality Factors

The Big Five is considered to be the dominant model of personality structure in trait psychology and includes factors of neuroticism (being anxious, angry, frustrated or worried), extraversion (being gregarious, assertive, and sociable), agreeableness (being warm and cooperative), conscientiousness (being organized, hardworking, and dependable) and openness (being creative and curious) (Goldberg, 1990). Big Five dimensions have been found to generalize across cultures, have a genetic basis, and are stable over time (Judge, et al., 1999).

Table 1

TEIQue Factors and Facets

Factors	Meaning	Associating Facets
Emotionality	"Individuals with a high score on this factor …can perceive and express emotions and use these qualities to develop and sustain close relationships with important others" (Petrides, 2009, p. 61).	Emotion perception Trait empathy Emotion expression Relationships
Self-Control	Individuals with a high score on this factor "have a healthy degree of control over their urges and desires… (and) are good at regulating external pressures and stress" (Petrides, 2009, p. 61).	Stress management Impulsiveness (low) Adaptability Self-motivation Emotion regulation
Sociability	"This factor… emphasizes social relationships and social influence. Individuals with high score on this factor are better at social interaction" (Petrides, 2009, p. 61).	Assertiveness Emotion management Social awareness
Well-being	"Reflect(ing) a generalized sense of Well-being, extending from past achievements to future expectations (Petrides, 2009, p. 61).	Self-esteem Trait happiness Trait optimism

Emotional intelligence has been criticized for having significant overlaps with personality dimensions such as the Big Five (e.g., Davis, Stankov, & Roberts, 1998; MacCann, Roberts, Matthews, & Zeidner, 2004). Despite the criticisms, there is an expanding body of evidence showing that *trait EI* has incremental validity over the Big Five and the Giant Three personality frameworks (Extremera & Fernandez-Berrocal, 2005; Furnham & Petrides, 2003; Saklofkse, Austin, & Minski, 2003). However, due to the prevalence of overlap concerns, it is strongly recommended in the literature to control for personality dimensions in any EI research (Salovey, 2006; Roberts, Zeidner, & Matthews, 2007). Including a measure of personality in the research design would rule out the rival hypothesis that the source of variance observed in the outcome is the personality factors and brings validity to the results. The Big Five personality dimensions were used in this study as control variables in order to obtain the incremental validity of EI or the additional variance it might be associated with in predicting career indecisiveness.

Positive and Negative Affect

A large body of literature suggests that moods influence the cognitive process involved in decision-making as they interfere with people's ability to process information (Clore, Schwarz, & Conway, 1994). There is a distinction between emotions and moods in several ways. Firstly, emotions are conceptualized as "response tendencies that unfold over relatively short time spans" (Fredrickson, 2001, p. 219), but affects are

often more long lasting, and experienced more consistently. Secondly, while emotions are direct responses to certain trigger events, affects are free-floating and far from being reactions. Lastly, unlike emotions that fit into various categories, affects vary along two dimensions, either positive or negative (Fredrickson, 2001). Watson, Clark and Tellegan (1988) defined positive and negative affect as follows:

> Positive Affect (PA) reflects the extent to which a person feels enthusiastic, active, and alert. High PA is a state of high energy, full concentration, and pleasurable engagement, whereas low PA is characterized by sadness and lethargy. In contrast, Negative Affect (NA) is a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of assertive mood states, including anger, contempt, disgust, guilt, fear, and nervousness, with low NA being the state of calmness and serenity (p. 1063).

When making a judgment, individuals use their affective state to evaluate the situation and reach an opinion. When happy, "individuals tend to overestimate the likelihood of positive and to underestimate the likelihood of negative outcomes and events, whereas the reverse holds for individuals in a sad mood" (Schwarz, 2000, p.434). As it is extremely difficult to exclude pre-existing affects when making a judgment, it is very likely that individuals' evaluation of any target be different depending on whether they are in a happy or sad mood (Schwarz, 2000).

Empirical Evidence on the link between EI and Career Decision – Making Difficulties

Several scholars have conducted empirical research on the association between emotional intelligence and career decision-making difficulties. To find all the relevant resources, electronic databases such as PsycInfo, Academic Search Complete, Human Resources, and Business Source Complete were searched. The keywords of *Career, Occupation, Decision-making, Occupational choice, Difficulties, indecisive, indecision, decided* and *Emotional Intelligence* were used. Only peer-reviewed articles in English were included in the review. 24 entries found out of which, 14 articles met the inclusion criteria and were reviewed. These studies are reviewed in the following paragraphs.

Brown, George-Curren and Smith (2003) conducted a study to investigate the relations between career decision-making self-efficacy, vocational exploration and commitment, and emotional intelligence. They also examined the moderating effect of gender on the relationship between EI and these variables. The data collected from 288 college students, revealed that all four EI factors including Empathy, Utilization of Feelings, Handling Relationships, and Self-Control (based on Tapia's model, 2001) were "predictive of career decision-making self-efficacy; however, only the Utilization of Feelings and Self-Control factors emerged as significant predictors of vocational exploration and commitment" (Brown, George-Curren &Smith, 2003, pp. 385-386). Gender had no moderation effect on the predictions.

Di Fabio and Palazzeschi (2009) examined the role of emotional intelligence and personality traits in relation to career decision-making difficulties using the Career

Decision Difficulties Questionnaire (CDDQ), the Bar-on Emotional Quotient Inventory: short (EQ-i: S), and the Big Five Questionnaire (BFQ) in an Italian context. They found that "emotional intelligence dimensions added a significant proportion of variance in addition to the variance in career decision difficulties due to personality traits (Di Fabio & Palazzeschi, 2009).

Three years later, Di Fabio, Palazzeschi and Bar–On (2012) published the results of a similar research in which the original form of EQ-i, core self-evaluation, and the Big Five personality traits were used as variables with a sample of Italian university students. Similar to the previous study, "it was found that EI add(ed) significant incremental variance compared to personality traits and core self-evaluation in predicting career decision-making difficulties" (Di Fabio, Palazzeschi & Bar – On, 2012, p. 118). The study was important as it opposed the criticisms that blamed EI for being nothing more than a repackaging of the personality traits. The authors called for replications in future research with larger more diverse samples and other EI measurement tools such as MSCEIT.

Di Fabio and Kenny (2010) conducted an experimental study and evaluated the effect of an EI training intervention on a group of Italian high school students. The training intervention was based on Mayer and Salovey's model of emotional intelligence and was divided into four sessions of 2.5 hours weekly. Using both performance-based (MSCEIT) and self-report (EIS) EI tests along with the Indecisiveness Scale and Career Decision-Making Difficulties Questionnaire, the authors discovered that the training intervention significantly contributed in increasing both performance-based and self-

report measures of EI and decreased career decision-making indecisiveness and problems related to lack of information in a meaningful manner. Based on their results, EI training may have the potential to promote career progress for students.

Di Fabio, Palazzeschi, Asulin-Peretz, and Gati (2013) investigated the roles of personality traits, career decision-making self-efficacy, perceived social support, and emotional intelligence in career indecision (developmental) and indecisiveness (chronic) in an Italian context. According to the findings, "career indecision, as measured by Career Decision–making Difficulties Questionnaire, was most highly associated with emotional intelligence, whereas career indecisiveness, as measured by the indecisiveness scale, was most highly associated with personality traits, and in particular with emotional stability" (p. 42). According to the results "the prediction of indecisiveness was much lower than that of indecision, (reflecting that) indecisiveness is a more complex phenomenon, and therefore harder to predict" (p.51). Separate analyses were run across gender and it was found that the prediction of both indecision and indecisiveness were stronger for women than men. The authors suggested further research to test the role of gender within these variables and replications with different measurement tools and with different populations.

Di Fabio and Saklofske (2014) examined the roles of ability and trait emotional intelligence, fluid intelligence, and personality traits in career decision-making self-efficacy, career indecision, and indecisiveness. The Advanced Progressive Matrices (a test of intelligence), Big Five Questionnaire (a test of personality traits), Mayer–Salovey-Caruso Emotional Intelligence Test, Bar–On Emotional Intelligence Inventory

(MSCEIT), Trait Emotional Intelligence Questionnaire (TEIQue), Career Decision Self-Efficacy Scale (Short Form), Career Decision-Making Difficulties Questionnaire, and Indecisiveness Scale were administered to 194 Italian high school students. According to the results:

> Both self-reported EI assessed by the EQ-i and the TEIQue added significant incremental variance beyond that accounted for by personality traits in relation to career decision-making self-efficacy, career indecision and indecisiveness. Of interest is that neither of the more cognitively driven measures of intelligence (fluid intelligence and ability EI) contributed to any of the predictions regarding the career-based domains. Another important finding … is that each of the two tested models performed slightly differently. The Petrides and Furnham (2004) model contributed almost twice as much variance to the prediction of the three career factors as did the EQ-I (p.177).

Based on the results, it appears that people with higher self-reported trait EI may be better able to understand and integrate emotional experiences, thoughts and actions that are related to career issues and the making of career decisions. Similar to their previous studies, the researchers asked for further research on different nationalities and different individuals who were exploring careers such as university students (Di Fabio & Saklofske, 2014).

Inspired by the need to represent the role of emotions in career related issues, Puffer (2011), designed a study, which included several career decision-making constructs and emotional intelligence. The results of the multiple regression analyses of

561 responses revealed that "EI was a salient predictor of vocational personality (Holland's Realistic, Investigative, Artistic, Social, Enterprising, and Conventional), vocational identity, and career indecision" (Puffer, 2011, p. 130). The study also revealed significant gender differences among men and women. For women, Understanding Emotions positively predicted Artistic, Social, and Conventional themes and negatively predicted Social and Conventional types. For men, low levels of Emotion Regulation, and Understanding corresponded to a high preference for Conventional career types. Positive associations between EI and vocational personality were observed only for women, not men in the sample. The authors suggested that "it is plausible that men use a more rational decision-making style and depend less on emotional information for the career development construct. For Vocational Identity, EI turned out to be a significant predictor for women only, where Facilitation of Emotions was a positive predictor and Perception of Emotions was a negative predictor. Finally, EI significantly predicted career indecision for both men and women but with different patterns. Men's high level of Emotion Perception predicted less nervousness in career decision-making but women's Emotion Regulation was associated with a high level of indecisiveness. The authors called for more studies to clarify the role of gender in such predictions as parts of the results were unexpected and contradictory to the previous studies.

Jiang (2014) examined the role of EI in predicting career decision-making self-efficacy and evaluated the moderating effect of gender and nationality (South Korea vs. China) on the prediction. The results revealed a significant relationship between EI

factors and Career Decision-making Self-Efficacy. The strength of prediction was greater among Chinese students than the South Koreans but gender played no significant moderating role. According to these findings, "culture might be an important factor that influences several roles of emotions in career decisions." (p. 121).

In another study, Jiang (2016) examined the relationship between emotional intelligence and career decision-making self-efficacy and the moderating role of gender. The results suggested that "EI could influence career decision-making self-efficacy through goal commitment, and professional commitment, and male students exhibited a stronger relationship between emotional intelligence and goal commitment compared with female students" (p. 30).

Di Fabio and Kenny (2012) examined the relationship between emotional intelligence and styles of decision-making. The decisional styles included: Rational, Intuitive, Dependent, Avoidant, and Spontaneous. According to the findings:

> Persons who are low in intrapersonal EI or emotional self-awareness may exhibit an avoidant style, being prone to avoiding making a decision, or they may evidence a dependent style, relying on others to make decisions for them. Persons who are weak on adaptability EI, lacking flexibility in coping with everyday problems, or who have difficulty managing stress may adopt a spontaneous decision making style, making decisions quickly just to get over them. On the other hand, strength in EI adaptability may contribute to the selection of a rational approach to decisions (p. 409).

Latalova and Pilarik (2015) investigated "the role of self-determination (SD) and perceived emotional intelligence (EI) in adopting specific career decision-making strategies… (using) a sample of 173 first-year university female students" (p. 95). According to the results, "higher SD and perceived EI were associated with more frequent use of adaptive and less frequent use of maladaptive career decision-making strategies" (p. 95).

Afza, Atta, & Shujja (2013) examined the predictive relationship pattern between emotional intelligence and career decision-making. The sample was comprised of 203 undergraduate students and the data was collected using Wong and Law Emotional Intelligence Scale and Career Decision Profile. Analysis of the results revealed significant correlational relationships between emotional intelligence and career decision-making. EI was found to be a significant predictor of career decision-making based on the results of a multiple regression analysis. The study suffered from design issues and the findings are not reliable.

Hammond et al (2010) examined the adequacy of a tripartite model of career indecision for African students, which included three factors of negative affect, poor vocational identity development and lack of career information. They also investigated the presence and degree of relationship among positive affect, emotional intelligence and the three factors of the indecision model. According to the results of a factor analysis, "five factors (including) career self-efficacy, career-related emotional maturity, information needs, vocational identity development, and career decisional status could

be extracted to represent the constructs related to career decision-making for African American students" (Hammond et al., 2010, p. 161).

Finally, Alexander et al. (2011) designed a study to predict career indecision by optimism, emotional intelligence, mental health and their combinations. Several hypotheses were formulated and Career Decision Scale, Life Orientation Test (for Optimism), Trait Emotional Intelligence Questionnaire, and Depression, Anxiety and Stress Scale were used to collect data from 142 university students. According to the results of a regression analysis, optimism, Emotional Intelligence, and mental health were all significant predictors of career indecision, both individually and in combination with each other. Among the factors of emotional intelligence, Self-Control and Emotionality were significant predictors while Well-being and Sociability were not.

Summary

Reviewing the previous studies on emotional intelligence and career decision-making reveals several gaps in the literature:

First, there is a paucity of research in the field as only 14 quantitative studies were found in the literature. There is a need for further empirical research before the role of EI in different aspects of career decision-making could be established.

Second, it seems that both emotional intelligence and personality traits play significant roles in the career decision-making difficulties. Considering the possible overlaps between emotional intelligence and personality factors, there is a legitimate need to examine the incremental or added value of EI in explaining variance in career decision-making difficulties by including both personality traits and emotional

intelligence in a single prediction model. While this consideration was observed in some of the previous studies, some others failed to do so. It is difficult to reach a conclusion regarding the role of EI in career decision-making difficulties without considering the effect of the personality traits.

Third, the role of emotional intelligence in career indecisiveness is not clear. At the time if the literature review, only one study (Di Fabio & Saklofske, 2014) was found that examined the association between career indecisiveness and emotional intelligence. Majority of the previous studies focused exclusively on career indecision.

Fourth, although a large body of literature suggests that moods influence the cognitive process involved in decision-making, the effects of positive and negative moods were not controlled for in the previous studies on EI and career decision-making difficulties.

Fifth, the moderating effect of gender in the relationship between EI and career decision-making difficulties needs further examination as contradictory evidence exists in the literature (Brown, George-Curren & Smith, 2003; Di Fabio et al., 2013; Puffer, 2011; Jiang, 2014; & Jiang, 2016). In other words, it is not clear if the association between emotional intelligence and career difficulties is the same for female versus male students.

Sixth, the literature suggests that students in different majors are significantly different in terms of their emotional intelligence (e.g. Perez and Castjon, 2005; Sanchez-Ruiz et. al., 2013). However, none of the previous studies that examined the role of EI in career decision-making difficulties among university students included academic major

as a variable. As a result, we do not know if the prediction of career indecisiveness by emotional intelligence would the same for engineering versus non-engineering students and the moderating effect of gender and academic major needs further exploration.

Based on the mentioned limitations, there was a legitimate need for a study to examine the incremental validity of emotional intelligence in predicting career indecisiveness over and beyond the effect of the personality traits and affectivity and to discover the moderating role of gender, academic major and the interaction of the two on the prediction.

CHAPTER III

METHOD

The purpose of this chapter is to describe the procedures and methodology employed in the study to collect and analyze data. The epistemological lens, research design, sampling, instrumentation, data collection and data analysis are discussed. All research procedures were pre-approved by Texas A&M University's Institutional Review Board (IRB).

Epistemological Lens

The epistemological lens or the philosophical assumption that was applied in this study was positivism. The positivist worldview, which is sometimes referred to as the scientific method, is the epistemological lenses used for quantitative research. It is shaped by the traditions in both the physical and social sciences with the purpose of explaining, predicting, controlling, causation, and generalizing in research (Merriam, 1998). The knowledge that develops through the positivism lens is based on "careful observation and measurement of the objective reality that exists out there in the world. Thus, developing numeric measures of observations and studying the behavior of individuals becomes paramount for a positivist" (Creswell, 2013, p. 7).

Research Design

This study incorporated a cross-sectional survey design administered at a single point in time with multiple dependent and independent variables. Research designs provide the framework for studying the relations among variables and have the main

technical function of controlling the variance and answering research questions in the most valid, objective, accurate and economic way (Kerlinger & Lee, 2000). This control mechanism "holds the statistical principle of **m**aximize systematic variance, **c**ontrol extraneous systematic variance, and **m**inimize error variance or what is called maximicon principle" (Kerlinger & Lee, 2000, p. 456).

Purpose of the Study

The purpose of this study was to examine the role of emotional intelligence (EI) in predicting career indecisiveness after controlling for the personality traits and positive and negative affect across a sample of male and female undergraduate students in engineering and educational fields. It also examined the moderating effect of gender, academic major (engineering vs. education) and the interaction of the two on the ability of EI to predict career indecisiveness.

Research Questions

The following research questions guided the study:

1. Does Emotional Intelligence Total have the ability to predict a significant proportion of variance in Career Indecisiveness after controlling for the personality traits and positive and negative affects?
2. Does Emotional Intelligence Total have the ability to predict a significant proportion of variance in the facets of career indecisiveness including *Anxiety, Pessimistic Views* and *Self-Concept and Identity*, after controlling for the personality traits and positive and negative affects?

3. What is the moderating effect of academic major on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?
4. What is the moderating effect of gender on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?
5. What is the three-way interaction effect of gender and academic major on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?

The Sample and the Population

Target Population

The target population of this study was defined as all undergraduate students of the Colleges of Engineering (N=9,832) and Education (N=5062) at a Research One University in the Southwest, USA (Total N = 14894). The rationale for the selection of these two colleges was the results of previous research, which demonstrated that students in engineering majors were significantly different from the students of educational majors in terms of their reported emotional intelligence (Sanchez-Ruiz, Perez-Gonzalez & Petrides, 2010; Sanchez-Ruiz, Mavroveli, & Poullis, 2013). The accessible population from which the sample was drawn included all undergraduate students from the colleges of engineering and education who volunteered to participate. The minimum required sample size for a multiple regression analysis with 15 variables was determined using the XLSTAT statistical package (http://statisticalinnovations.com/index.html). According to the conducted analysis, for 15 variables a total of 500 observations were

needed in order to work with the power of 0.8 to detect an effect size as small as .02.The report of the analysis is provided in Appendix A.

Study Sample

The survey was open for July 5, 2016 all through October 31, 2016. By the closing date of the survey, 720 individuals from the described population had recorded their answers. Through a process of data cleaning, the recorded responses of the participants who either left the survey incomplete or were inattentive when answering the questions were removed (139 entries). The data cleaning process decreased the sample size to 582, still exceeding the minimum requirement of 500.

The sample was balanced for gender and academic major. As described in Table 2, respondents were 46% male and 54% female. Forty-eight percent of the participants were in the college of engineering and 52% came from the college of education. A majority of the participants were between 18-21 years of age (93%). Seventy-percent of the them were white and 19% were Hispanic. African Americans (3.3%), Native Americans (.5%), Asians (6%), and other (2%) ethnicities were not well represented in the sample. A majority of the participants were sophomores (38%), juniors (28%), and seniors (33%) with very few freshmen (1.1%). The sample was comprised of mostly US citizens (98%). The crosstab results (see Table 3) indicated that among the Engineering students, 30% were female and 70% were male. This proportion was almost the opposite among the Education major students, with 75% of female students versus 25% of males.

Table 2

Sample vs. Population Characteristics

Characteristics		Sample (n)	Percent of (n)	Population (N)	Percent of (N)
Gender	Male	267	46%	23,672	50.9%
	Female	315	54%	22,820	49.1%
	Total	582	100%	46,492	100%
Major	Education	303	52%	34,772	75%
	Engineering	279	48%	11,720	25%
	Total	582	100%	46,492	100%
Year in the Program	Freshman	6	1.1%	10,468	22.5%
	Sophomore	220	38%	10,686	23%
	Junior	163	28%	10,789	23%
	Senior	193	33%	14,397	31%
	Total	582	100%	46,492	100%
Ethnicity	White	401	69%	29,643	64%
	Hispanic	111	19%	10,276	22%
	Black	19	3.3%	1,688	4%
	Native American	3	0.5%	115	.2%
	Asian	36	6%	2,803	6%
	Other	12	2.1%	1,280	3%
	Total	582	100%	46,492	100%
Citizenship Status	US	573	98.4%	45,805	98.5%
	International	9	1.6%	687	1.5%
	Total	582	100%	46,492	100%
Age	Below 18	0	0%	73	.2%
	18-21	541	93%	36,333	78.1%
	22-25	28	5%	9,227	20%
	Over 25	13	2.3%	859	2%
	Total	582	100%	46,492	100%

Table 3

*Major*Gender Cross tabulation*

College	Gender	Sample n	Percent of n	Population N	Percent of N
College of Engineering	Male	193	70%	7,813	80%
	Female	85	30%	2,019	20%
	Total	278	100%	9,832	100%
College of Education	Male	74	25%	1,201	23%
	Female	229	75%	3,861	76%
	Total	303	100%	5062	100%

Sampling Bias

A comparison of the sample to the study population (see Table 2) reveals that the sample closely resembled the population across almost all the demographic factors with very few exceptions. An underrepresentation of the population was found only in the percentage of freshmen students and the age group. While the population included 22.5% of freshmen students, the sample was comprised of only 1.1% freshmen. In terms of age, the 18-21group was represented by 78% in the population, yet the representation of this group in the sample was larger (98%). The distribution of female and male students across engineering and education majors in the population was well represented in the sample. As Table 2 demonstrates, 30% of the respondents in the engineering majors were female and 70% were male. The corresponding population was slightly different where there were 20% female and 80% male students. The education major participants were 75% female and 25% male, almost identical to the population's gender breakdown (76% female, 24% male). The sample was almost balanced in terms of the

number of engineering (48%) versus education (52%) major students. These percentages were not observed in the population because the researcher intentionally picked almost the same number of individuals from the Colleges of Engineering and Education in order to have a balanced sample and for the sake of the accuracy of the statistical analyses.

Instrumentation

Trait Emotional Intelligence Questionnaire- Short Form (TEIQue-SF)

TEIQue-SF is a self-report 30-item questionnaire based on the *TEIQue* long form (Petrides, 2009). TEIQue-SF includes 2 items from each of the 15 facets of the long-form TEIQue (See Appendix A) and the items are scored on a seven-point Likert scale. It measures EI in terms of the total score in addition to 4 EI factors including *Emotionality*, *Self-Control*, *Sociability*, and *Well-being*. The factors and the corresponding facets are presented in Table 1. The short version of TEIQue was used in this study for the sake of practicality (See Appendix B).

The results of the previous studies indicated that the instrument has good psychometric features. Petrides (2009) reported high to moderate internal consistency coefficients for the total trait EI (.88), *Well-being* (.80), *Self-Control* (.65), *Emotionality* (.73), and *Sociability* (.69) factors. Cooper and Petrides (2010) conducted a psychometric analysis on the instrument and recommended it to be used when the administration of the long form is not practical. According to their analysis, "most items had good discrimination and threshold parameters and high item information values" (p. 449). In this study Cronbach's alpha reliability of .88 was obtained for the total EI, .8 for *Well-being*, .65 for *Self-Control*, .66 for *Emotionality* and .70 for *Sociability*

dimensions. The coefficients all indicate good internal consistencies.

Regarding the validity of the TEIQue, Petrides (2009) reported on a psychometric validity analysis:

> Trait EI is a distinct (because it can be isolated in personality space), compound (because it is partially determined by several personality dimensions) construct that lies at the lower levels of personality hierarchies (because trait EI factor is oblique, rather than orthogonal to the Giant Three and the Big Five) (p. 26).

For the criterion measures, TEIQue was positively related to life satisfaction and perceived quality of social support, negatively related to indicators of anxiety and depression and displayed incremental abilities in predicting coping styles, emotional reactivity, loneliness and personality disorders (Freudenthaler et al., 2008). In addition, TEIQue has "incremental validity vis-à-vis a wide range of criteria over the Big Five, the Giant Three, and other relevant variables like alexithymia, and optimism" (Petrides & Furnham, 2009, p. 15).

Emotional and Personality Career Decision- Making Difficulties Scale-Short Form (EPCD)

The short version of the EPCD, which includes 25 items, was used in this study to prevent participants' boredom (Saka, Gati, & Kelly, 2008). The correlation of the total EPCD scores of the original version (53–item) version with that of the 25-item version is reported to be .98 (Malka–Gidron, 2006, as cited in Gati et al., 2010). *EPCD* measures the global career indecisiveness in addition to its three underlying facets including *Pessimistic Views, Anxiety,* and *Self-Concept and Identity* on a nine-point Likert scale

(See Appendix C).

The internal consistency coefficients of the *EPCD* short form are high. They have been reported as .90 for the total *EPCD* and .72, .89, and .84 for the *Pessimistic views, Anxiety,* and *Self-Concept and Identity* clusters, respectively in previous studies (Gati et al., 2010). In this study the Cronbach's alpha reliability of .92 was obtained for the total *EPCD* global score. In terms of the three clusters, the following coefficients were obtained: Pessimistic Views (.73), Anxiety (.92), Self-Concept and Identity (.85). In congruence with the previous studies, the coefficients demonstrated a high internal consistency for the global and the cluster scores.

According to the previous studies, EPCD is a valid tool as it can significantly differentiate between individuals who experience career decision-making difficulties and those who do not (Saka, Gati, & Kelly, 2008). The validity of the *EPCD* was established through moderate to high correlations with measures of general indecisiveness, self-esteem, general anxiety, identity diffusion and moratorium (Saka & Gati, 2007).

The Big Five Inventory (BFI)

The Big Five personality traits were measured using the 44-item BFI (John, Naumann, & Soto, 2008). BFI measures the five personality traits of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to experience. The scales' items are rated on a five-point Likert scale (See Appendix E). The internal consistency of BFI scales has reported ranging from .75 to .90 (.80 on average) and the three-month test-retest reliabilities range from .80 to .90 with a mean of .85 in US and Canadian samples (Rammstedt & John, 2007, as cited in John, Naumann, & Soto, 2007).

Cronbach's alpha reliability of .88 for Extraversion, .79 for Agreeableness, .80 for Conscientiousness, .81 for Neuroticism, and .79 for Openness were obtained in this study, all indicating a high internal consistency. Based on Rammstedt and John's (2007) research on BFI's validity, the "validity evidence, includes substantial convergent and divergent relations with other Big Five instruments (TDA, Neo Five Factor Inventory) as well as with peer ratings" (as cited in John, Naumann, & Soto, 2007, p. 130).

Positive and Negative Affect Scale (PANAS)

PANAS is a measure of general affective disposition, which consists of two scales (Positivity and Negativity) each containing ten items (Watson et al., 1988). The scales items are rated on a five-point Likert scale. In this study, participants were asked to rate how they felt *during the past few days* (See Appendix F). *PANAS* is a highly reliable tool. Watson et al. (1988) reported the Cronbach's alpha reliabilities (internal consistency) of the PA and NA scales to be .86 and .87, respectively. In this study Cronbach's alpha reliability of .87 was obtained for the PA, and .82 for the NA, which demonstrate a high internal consistency. Watson et al. (1988) reported on convergent/divergent, factorial and external validity of the *PANAS*. The convergent correlations "ranged from .89 to .95, whereas the discriminant correlations (were) quite low ranging from -.02 to -.18" (Watson et al., 1988, p. 1066). All items on the scale demonstrated factorial validity. As for the external validity, expected correlations were observed with measures of the related constructs (Watson et al., 1988) (See Appendix D).

Demographic Information Questionnaire

The participants' demographic information including age, gender, academic major, year in the program, ethnicity, and citizenship status were collected through a brief 6-item questionnaire (See Appendix D).

Data Collection Procedures

All the study respondents were tested on the four measurement scales of the study including *Trait Emotional Intelligence Questionnaire- Short Form (TEIQue-SF), Emotional and Personality Career Difficulties Scale-Short Form (EPCD), Positive and Negative Affect (PANAS)* and *BFI Scale*, in addition to completing the demographic information questionnaire.

The *TEIQue* instrument was developed by Dr. K. V. Petrides and is available through London Psychometric Laboratory at the University College London website (http://www.psychometriclab.com). The website is directed by Dr. Petrides who requires no permission to use this test for research purposes. The *BFI* scale is open access. The test is developed by Dr. Oliver P. John and is available to the researchers who register and explain their research purposes through Berkeley Personality Lab website (https://www.ocf.berkeley.edu/~johnlab/bfi) directed by Dr. John. The *EPCD* scale was developed by Dr. Itamar Gati at Hebrew University, Jerusalem, who authorized the researcher in writing to use the test and provided the instrument and the scoring manual. Finally, the *PANAS* scale is provided in a published article by its developers (Watson, Clark, & Tellegen, 1988). The researcher created a single online survey using Qualtrics, which contained all the items from the four questionnaires in addition to the

demographic information questions. The demographic information included age, ethnicity, gender, citizenship, major and year in the program. In order to detect inattentive respondents, items such as *If you are a human being, please select 4* were added in each page of the survey. Finally, a cover page containing the informed consent and instructions for completing the survey was created. Once the IRB approval was obtained (See Appendix H), the invitation email (See Appendix G) containing the link to the survey was sent to several professors who taught undergraduate courses at the colleges of Education and Engineering. Some of the professors agreed to forward the email to their students and encouraged their participation.

Data Analysis

The data were analyzed using IBM SPSS software Version 23 and PROCESS (Hayes, 2013) which is an add-on to SPSS for statistical mediation, moderation, and conditional process analysis (http://www.processmacro.org/). All statistical tests were run at the .05 alpha level. Descriptive statistics were obtained and reported. A correlational matrix was calculated to determine the direction and the strength of the relationships between the interval variables of the study. The Variance Inflation Factors (VIF) were also assessed. As Hayes (2013) explained:

> VIF quantifies the degree of collinearity by providing an index that measures how much the variance of an estimated regression coefficient is increased because of collinearity. Collinearity is a phenomenon in which two or more predictor variables in a multiple regression model are highly correlated, meaning

that one can be linearly predicted from the others with a substantial degree of accuracy (p.157).

The four scales of the study including the *Trait Emotional Intelligence Questionnaire (TEIQue), Emotional and Personality-Related Career Decision-Making Difficulties (EPCD), Big Five Personality Traits (BFI),* and *Positive and Negative Affect (PANAS)* were tested for internal consistency using Cronbach's alpha.

To determine if EI had the ability to predict Career Indecisiveness Total score and its facets including Pessimistic Views, Anxiety and Self-Concept and Identity, beyond the effect of the personality traits and positive and negative affect, four separate hierarchical regression analyses (one for each dependent variable) were conducted. Hierarchical regression allows for the examination of how each independent variable influences each of the dependent or outcome variables. Additionally, it allows for the examination of any additional variance accounted for by each independent variable. For each of the outcome or dependent variables (Career Indecisiveness Total, Pessimistic Views, Anxiety, and Self-Concept and Identity) the five personality traits (Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness) and the positive and negative affect were entered as predictors or independent variables in the equation to control for their influence on the outcome variable followed by the EI total score. The EI total was inserted in the last step to determine the additional variance in the outcome variable associated with it over and beyond the personality traits. To address whether gender, academic major and their interaction influenced the associations between EIand career indecisiveness total score and its cluster scores, a moderation

model was constructed using PROCESS. In a moderation model, the outcome variable was regressed on the predictor and moderator variables as well as onto a multiplicative interaction term of the predictor and the moderator. This interaction term was included in the model to test the influence of the putative moderator (here gender, academic major and the interaction of major and gender). Table 4 specifies the independent and dependent variables in play for each research question.

Table 4

Data Analysis Procedures Broken by Research Questions

Research Questions	Dependent, Independent, and Control Variables	Statistical Tool
RQ1.Does Emotional Intelligence Total have the ability to predict a significant proportion of variance in Career Indecisiveness Total after controlling for personality traits and positive and negative affect?	DV: Career Indecisiveness Total IV: Total EI IVs (Control): Neuroticism, Extraversion, Openness to Experience, Agreeableness, Conscientiousness, Positive Affect, Negative Affect	Hierarchical Multiple Regression
RQ2. Does Emotional Intelligence Total have the ability to predict a significant proportion of variance in the facets of career indecisiveness including Anxiety, Pessimistic Views and Self-Concept and Identity, after controlling for personality traits and positive and negative affect?	DVs: Anxiety, Pessimistic Views and Self-Concept an Identity IV: Total EI IVs (Control). Neuroticism, Extraversion, Openness to Experience, Agreeableness, Conscientiousness, Positive Affect, Negative Affect	Hierarchical Multiple Regression

Table 4 Continued

Research Questions	Dependent, Independent, and Control Variables	Statistical Tool
RQ3. What is the moderating effect of academic major on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?	DV: Career Indecisiveness Total IVs: EI Total, Academic Major, EI Total* Academic Major IVs (Control): Neuroticism, Extraversion, Openness to Experience, Agreeableness, Conscientiousness, Positive Affect, Negative Affect	Moderation
RQ4. What is the moderating effect of gender on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?	DV: Career Indecisiveness Total IVs: EI Total, Gender, EI Total*Gender IVs (Control): Neuroticism, Extraversion, Openness to Experience, Agreeableness, Conscientiousness, Positive Affect, Negative Affect	Moderation

CHAPTER IV

RESULTS

Assumptions for Interpretation of OLS Regression

For every regression conducted in this study, the assumptions of linearity, normality, homogeneity and homoscedasticity were met. The histogram of standardized residuals demonstrated normality as the data was centered around 0 (See Figure 2). The normal p-p plots for the standard residuals depicted near-perfect fit along the diagonal (See Figure 3) and the scatterplot for the regression standardized residual demonstrated that the assumptions of homogeneity and homoscedasticity were also met (See Figure 4).

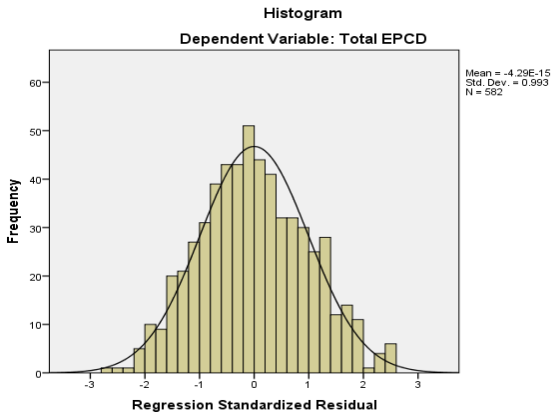

Figure 2. Histogram for the Normality Assumption.

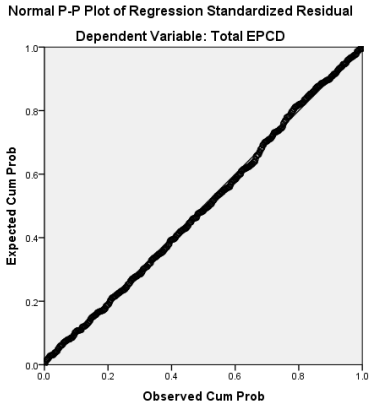

Figure 3. Normal P-P Plot for the Linearity Assumption.

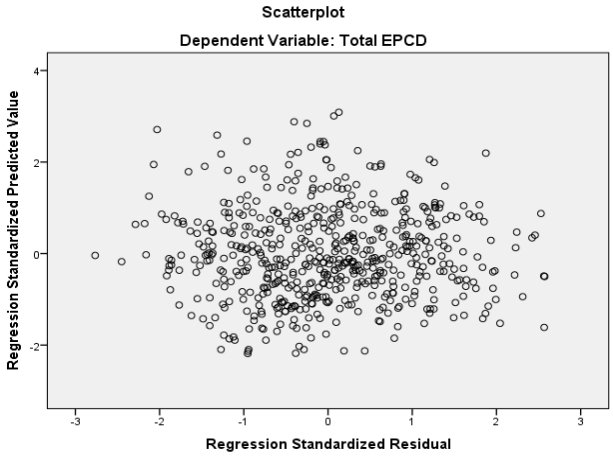

Figure 4. Scatterplot for the Homogeneity and Homoscedasticity Assumptions.

Variance Inflation Factors (VIFs)

Variance Inflation factors (VIFs) for each of the independent predictors were collected to evaluate the impact of multicollinearity in the data. VIF "quantifies how much predictor variable's standard error is influenced by its correlation with the other

variables in the model" (Hayes, 2013, p. 284). According to Meyers (1990), it is generally accepted that there is no concern for multicollinearity issue if the VIF is not greater than 10. The VIFs for this study were in the acceptable interval as the largest was 2.45 for all the regression models (See Table 5). Thus, multicollinearity did not threaten the validity of the results. The minimum required sample size for a multiple regression analysis with 15 variables and a power of .8 to detect an effect size as small as .02 was 500 observations. The sample size (*n*= 582) exceeded this number.

Descriptive Statistics

Table 6 presents the descriptive data for all the interval variables of the study including independent variable (EI Total), control variables (Neuroticism, Agreeableness, Extraversion, Openness to Experience, Conscientiousness, Positive Affect, and Negative Affect), and dependent variables (Career Indecisiveness Total, Anxiety, Self-Concept and Identity, and Pessimistic Views).

Table 5

Variance Inflation Factors

Variables	Tolerance	VIF
Positive Affect	.616	1.622
Extraversion	.744	1.344
Agreeableness	.818	1.222
Conscientiousness	.756	1.323
Neuroticism	.491	2.038
Openness	.900	1.111
Negative Affect	.610	1.639
EI Total	.408	2.451

Table 6

Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
EI Total	582	93.00	207.00	155.25	19.38
Self-Concept	582	1.00	8.63	4.05	1.567
Pessimistic Views	582	1.00	7.83	3.52	1.322
Anxiety	582	1.00	9.00	5.02	1.96
Openness to Experience	582	1.20	5.00	3.41	.644
Neuroticism	582	1.00	4.75	2.68	.74
Conscientiousness	582	1.56	5.00	3.75	.61
Agreeableness	582	1.56	5.00	3.98	.59
Extraversion	582	1.13	5.00	3.43	.84
Negative Affect	582	10.00	46.00	21.36	6.55
Positive Affect	582	14.00	50.00	35.90	6.80
Career Indecisiveness Total	582	.96	7.96	4.07	1.36
Valid N (listwise)	582				

Correlations

A bivariate correlation matrix of the 12 interval variables of the study is presented in Table 7. Significant correlations were observed across most of the variables in the expected direction. EI was positively correlated with Positive Affect, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience and negatively correlated with Negative Affect, Neuroticism, Career Indecisiveness Total, and its clusters including Pessimistic View, Self-Concept and Identity, and Anxiety. Career Indecisiveness Total was positively correlated with the Negative Affect and

Neuroticism. As expected, it was negatively correlated with EI Total, Positive Affect, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience.

Pessimistic views and Anxiety were positively correlated with Negative Affect and Neuroticism and negatively correlated with EI Total, Positive Affect, Extraversion, Agreeableness and Conscientiousness. Self-Concept and Identity had the same type of correlation with EI Total and the five personality traits except Openness to experience. Unlike Pessimistic Views and Anxiety, Self-Concept and Identity had a weak yet significant correlation with Openness to Experience. The results of the correlational analysis were consistent with the findings from the previous studies regarding the significant role of personality traits in both emotional intelligence (e.g., Conte, 2005; Locke, 2005) and career indecisiveness (e.g., Di Fabio & Palazzechi, 2009; Jackson, Furnham, & Lawty-Jones, 1999; Lounsbury et al., 2005; Kelly & Shin, 2009; Page, Bruch, & Haase, 2).

Table 7

Simple Correlation Matrix of the Variables in the Study

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. EIT	155.25	19.38	1															
2. Self- Concept	4.04	1.57	-.671*	1														
3. Pessimistic Views	3.52	1.32	-.451*	.573*	1													
4. Anxiety Mean	5.02	1.96	-.374*	.668*	.561*	1												
5. CIT	4.07	1.36	-.570*	.879*	.763*	.910*	1											
6. Positive Affect	35.91	6.80	.548*	-.416*	-.275*	-.265*	-.369*	1										
7. Negative Affect	21.36	6.55	-.466*	.543*	.281*	.333*	.455*	-.211*	1									
8. Extraversion	3.43	.84	.426*	-.306*	-.242*	-.213*	-.291*	.411*	-.127*	1								
9. Agreeableness	3.98	.59	.339*	-.211*	-.166*	-.071	-.162*	.230*	-.300*	.142*	1							
10.Conscientiousness	3.75	.61	.425*	-.342*	-.186*	-.190*	-.279*	.299*	-.274*	.063	.308*	1						
11. Neuroticism	2.68	.74	-.599*	.634*	.266*	.372*	.508*	-.423*	.571*	-.225*	-.268*	-.221*	1					
12. Openness	3.41	.64	.262*	-.092*	-.056	-.065	-.083*	.253**	-.024	.154*	.134*	.093*	-.137*	1				
13. Well-being	30.32	4.40	.793*	-.555*	-.348*	-.255*	-.438*	.523*	-.401*	.403*	.322*	.337*	-.516*	.160*	1			
14. Self-Control	24.66	4.63	.713*	-.585*	-.287*	-.333*	-.473*	.343*	-.438*	.118*	.165*	.338*	-.681*	.111*	.488*	1		
15. Emotionality	35.30	5.6	.705*	-.352*	-.314*	-.212*	-.327*	.337*	-.270*	.293*	.382*	.244*	-.177*	.239*	.398*	.304*	1	
16.Sociability	26.32	4.54	.723*	-.472*	-.342*	-.290*	-.421*	.349*	-.274*	.394*	.033	.281*	-.360*	.234*	.483*	.392*	.391*	1

Note. n= 582, *p<.0.*
CIT= Career Indecisiveness Total.
EIT= Emotional Intelligence Total.

Results for Research Question One

Does Emotional Intelligence Total have the ability to predict a significant proportion of variance in Career Indecisiveness Total after controlling for the personality traits and positive and negative affects?

To answer this question, a hierarchical multiple regression analysis was conducted. In the first step, all the control variables including the five personality traits (Agreeableness, Openness to Experience, Extraversion, Conscientiousness, and Neuroticism) and Positive and Negative Affect were entered in the regression model. Emotional Intelligence Total was entered in the second step to obtain its added value in explaining the proportion of variance in Career Indecisiveness Total.

The regression model testing the impact of personality traits and positive and negative affect on Career Indecisiveness Total yielded a significant regression equation, R^2 = .36, F (7,574) = 46.38, p = .0. A second analysis was conducted to evaluate whether Emotional Intelligence Total (EIT) predicted Career Indecisiveness Total over and above personality traits and positive and negative affect. EIT accounted for a significant proportion of the Career Indecisiveness Total variance after controlling for the effects of personality traits and positive and negative affect, ΔR^2 = .036, F (1,573) = 34.54, p=0. The B for the EI Total variable (-.021) was in a negative direction as expected and significant, t (573) = -5.88, p =.0, indicating that emotional intelligence Total was associated with significantly lower levels of Career Indecisiveness Total given the constants were included in the model (See Table 8). The results suggested that students who have similar personality traits and positive and negative affect were associated with

having fewer career indecisiveness issues if they were more emotionally intelligent. The confidence intervals are relatively narrow, indicating a high accuracy in the obtained results.

Table 8

Summary of the Hierarchical Regression Analysis of Variables Relating to Career Indecisiveness Total

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	ΔF	95% CI
Step 1	.361				46.38*		
Positive Affect			-.027*	.008			[-.043, -.011]
Negative Affect			.045*	.009			[.028, .062]
Extraversion			-.235*	.059			[-.351, -.119]
Agreeableness			.115	.085			[-.053, .282]
Conscientious-ness			-.248*	.082			[-.409, -.088]
Neuroticism			.533*	.081			[.375, .692]
Openness			.052	.073			[-.092, .196]
Step 2	.398	.036			47.27	34.54*	
Positive Affect			-.016	.008			[-.032, .001]
Negative Affect			.037*	.009			[.02, .054]
Extraversion			-.13*	.06			[-.248, -.012]
Agreeableness			.152	.083			[-.011,315]

Table 8 Continued

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	Δ*F*	95% CI
Conscientiousness			-.112	.083			[-.275, .05]
Neuroticism			.348*	.085			[.182, .514]
Openness			.112	.072			[-.03, .253]
Step 3	.4*	.001			38.76*	.945	
Positive Affect			-.017*	.008			[-.033, -.001]
Negative Affect			.038*	.008			[.021, .055]
Extraversion			-.135*	.06			[-.254, -.017]
Agreeableness			.115	.084			[-.05, .28]
Conscientiousness			-.13	.082			[-.293, .032]
Neuroticism			.298*	.087			[.128, .469]
Openness			.114	.071			[-.027, .255]
EI Total			-.022	.004			[-.031, -.014]
Major x EI Total			.004	.004			[-.004, .013]
Step 4	.4*	.000			38.54*	.148	
Positive Affect			-.015	.008			[-.031, .000]
Negative Affect			.038*	.008			[.021, .055]

Table 8 Continued

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	ΔF	95% CI
Extraversion			-.148*	.06			[-.267, -.029]
Agreeableness			.111	.084			[-.055, .278]
Conscientiousness			-.136	.083			[-.3, .027]
Neuroticism			.285*	.888			[.11, .459]
Openness			.131	.072			[-.010, .274]
EI Total			-.020*	.004			[-.028, -.012]
Gender x EI			-.0018	.004			[-.010, .007]
Step 5	.4*	.000			27.79*	.271	
Positive Affect			-.017*	.008			[-.033, -.000]
Negative Affect			.039*	.008			[.022, .0557]
Extraversion			-.151*	.061			[-.271, -.031]
Agreeableness			.093	.085			[-.075, .261]
Conscientiousness			-.143	.083			[-.307, .020]
Neuroticism			.265*	.089			[.089, .442]
Openness			.126	.072			[-.015, .269]
EI Total			-.021*	.006			[-.033, -.008]
Major x EI Total			.002	.007			[-.011, .016]
Gender x EI Total			-.002	.007			[-.016, .011]
Major x Gender			-.913	1.60			[-4.06, 2.23]

Table 8 Continued

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	ΔF	95% CI
Major x Gender x EI Total			.005	.01			[-.014, .025]
EI Total			-.021*	.006			[-.033, -.008]
Major x EI Total			.002	.007			[-.011, .016]
Gender x EI Total			-.002	.007			[-.016, .011]
Major x Gender			-.913	1.60			[-4.06, 2.23]
Major x Gender x EI Total			.005	.01			[-.014, .025]

Note. *$p<.05$, CI=Confidence Interval.

Results for Research Question Two

Does Emotional Intelligence Total have the ability to predict a significant proportion of variance in the facets of career indecisiveness including Anxiety, Pessimistic Views and Self-Concept and Identity, after controlling for the personality traits and positive and negative affects?

Three separate hierarchical regression analyses were conducted to answer this question as it included three dependent variables: Anxiety, Pessimistic Views, and Self-Concept and Identity. In all the three regression models, the control variables including the five personality traits (Agreeableness, Openness to Experience, Extraversion, Conscientiousness, and Neuroticism) and Positive and Negative Affect were entered in the first step followed by the Emotional Intelligence Total (EIT) to obtain the added value of EI in explaining the variance in the clusters of career indecisiveness.

The regression model testing the impact of the personality traits and positive and negative affect on Anxiety yielded a significant regression equation, R^2 = .19, F (7,574) = 19.57, p =. 00. A second analysis was conducted to evaluate whether EIT predicted Anxiety over and above personality traits and positive and negative affect. EIT accounted for a significant proportion of variance in Anxiety after controlling for the effects of personality traits and positive and negative affect, ΔR^2 = .007, F (1,573) = 4.8, p = .029. The B coefficient for EI Total (-.013) was in a negative direction as expected and significant t (573) = -2.19, p = .029, indicating that emotional intelligence was associated with significantly lower levels of career- related Anxiety (See Table 9). The results suggested that students who had similar personality traits and positive and negative affect were associated with having fewer career-related Anxiety issues if they were more emotionally intelligent. The confidence intervals are relatively narrow, indicating a high accuracy in the obtained results.

Table 9

Summary of the Hierarchical Regression Analysis of Variables Relating to Anxiety

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	ΔF	95% CI
Step 1	.193*				19.575*		
Positive Affect			-.03*	.013			[-.056, -.003]
Negative Affect			.052*	.014			[.024, .08]
Extraversion			-.258*	.096			[-.446, -.069]

Table 9 Continued

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	ΔF	95% CI
Conscientious-ness			-.249	.133			[-.509, .012]
Neuroticism			.552*	.131			[.294, .809]
Openness			.029	.119			[-.205, .263]
Step 2	.199*	.007*			17.84*	4.8*	
Positive Affect			-.022*	.014			[-.049, .004]
Negative Affect			.048*	.014			[.019, .076]
Extraversion			-.193	.100			[-.389, .004]
Agreeableness			.309*	.138			[.037, .581]
Conscientious-ness			-.164	.138			[-.435, .107]
Neuroticism			.473*	.141			[.161, .713]
Openness			.066	.120			[-.170, .301]
EI Total			-.013*	.006	-.128		[-.025, -.001]

*Note. *p<.05,* CI=Confidence Interval.

The regression model testing the impact of personality traits and positive and negative affect on Self-Concept and Identity yielded a significant regression equation, R^2 = .52, *F* (7,574) = 88.65, *p* =. 00). A second analysis was conducted to evaluate whether Emotional Intelligence Total (EIT) predicted Self-Concept and Identity over and above personality traits and positive and negative affect. Emotional Intelligence

Total accounted for a significant proportion of the Self-Concept and Identity variance after controlling for the effects of personality traits and positive and negative affect, ΔR^2 = .052, F (1,573) = 69.18, p=. 00. The B for Emotional Intelligence Total variable (-.029) was in a negative direction as expected and significant, t(573) = -8.32, p=.00 indicating that emotional intelligence was associated with significantly lower levels of Self-Concept and Identity type of difficulties. The results suggested that students who had similar personality traits and positive and negative affect were associated with having fewer Self-Concept and Identity difficulties if they were more emotionally intelligent (See Table 10). The confidence intervals are relatively narrow, indicating a high accuracy in the obtained results.

Table 10

Summary of the Hierarchical Regression Analysis of Variables Relating to Self-Concept and Identity

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	ΔF	95% CI
Step 1	.519*				88.65*		
Positive Affect			-.027*	.008			[-.043, -.011]
Negative Affect			.056*	.009			[.038, .073]
Extraversion			-.253*	.059			[-.369, -.136]
Agreeableness			.11	.086			[-.058, .279]
Conscientiousness			-.378*	.082			[-.54, -.217]
Neuroticism			.873*	.081			[.714, 1.032]

Table 10 Continued

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	ΔF	95% CI
Openness			.074	.074			[-.07, .219]
Step 2	.756*	.052*			95.43*	69.18*	
Positive Affect			-.011	.008			[-.027, .005]
Negative Affect			.045*	.008			[.029, .062]
Extraversion			-.108	.059			[-.223, .007]
Agreeableness			.162*	.081			[.002, .321]
Conscientiousness			-.19*	.081			[-.349, -.032]
Neuroticism			.618*	.082			
Openness			.156*	.07			
EI Total			-.029*	.003			[-.036, -.022]

*Note. *p<.05,* CI=Confidence Interval.

The regression model testing the impact of personality traits and positive and negative affect on Pessimistic Views yielded a significant regression equation, $R^2 = .15$, F (7,574) = 14.8, p =. 00. A second analysis was conducted to evaluate whether Emotional Intelligence Total (EIT) predicted Pessimistic Views over and above the personality traits and positive and negative affect. EIT accounted for a significant proportion of variance in Pessimistic Views after controlling for the effects of the personality traits and positive and negative affect, $\Delta R^2 = .053$, F (1,573) = 38.28, p=. 00. The *B* for Emotional Intelligence Total variable (-.024) was in a negative direction

as expected and significant *t* (573) = -6.19, *p*=. 00 indicating that emotional intelligence was associated with significantly lower levels of Pessimistic Views. The results suggested that students who have similar personality traits and positive and negative affect were associated with having fewer Pessimistic Views difficulties if they were more emotionally intelligent (See Table 11). The confidence intervals are relatively narrow, indicating a high accuracy in the obtained results.

Table 11
Summary of the Hierarchical Regression Analysis of Variables Relating to Pessimistic Views

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	Δ*F*	95% CI
Step 1	.153*				14.80*		
Positive Affect			-.028*	.009			[-.046, -.011]
Negative Affect			.028*	.010			[.009, .047]
Extraversion			-.220*	.066			[-.349, -.091]
Agreeableness			-.089	.095			[-.274, .097]
Conscientiousness			-.115	.091			[-.293, .063]
Neuroticism			.144	.089			[-.032, .320]
Openness			.064	.081			[-.096, .224]
Step 2	.454*	.053*			18.573*	38.28*	
Positive Affect			-.015	.009			[-.033, .003]
Negative Affect			·020*	.009			[.001, .038]
Extraversion			-.098	.066			[-.229, .032]

Table 11 Continued

Variable	R^2	ΔR^2	*B*	SE *B*	*F*	Δ*F*	95% CI
Agreeableness			-.045	.092			[-.226, .135]
Conscientiousness			.043	.091			[-.137, .223]
Neuroticism			-.071	.093			[-.254, .113]
Openness			.133	.080			[-.023, .289]
EI Total			-.024*	.004			[-.032, -.017]

*Note. *p<.05,* CI=Confidence Interval.

Research questions 3, 4, and 5 were all focused on the moderation effects. While research question 3 and 4 asked about a two-way interaction effect, research question 4 contained a three-way interaction term. As a result, priority was given to research question 5 analyses as it contained a higher order interaction term.

Results for Research Question Five

What is the three-way interaction effect of gender and academic major on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?

PROCESS (Hayes, 2013) was used to investigate the three- way interaction effect of gender and academic major on the relationship between Emotional Intelligence Total (EIT) and Career Indecisiveness Total. In other words, I sought to discover if the prediction of Career Indecisiveness by EIT was different for male versus female students across engineering versus non-engineering majors. The regression equation tested the impact of the three-way interaction between gender, major and EIT on Career Indecisiveness Total. The entire regression model was significant, F (14, 566) = 27.79,

p=.00, accounting for 41% of the variance in Career Indecisiveness Total. However, the three-way interaction term failed to explain a significant proportion of variance in Career Indecisiveness Total beyond the controls, F (1,566) = .27, p = .60, accounting for just .003% of the additional variance (See Table 8).

Due to the fact that the three-way interaction effect was not significant, the lower order interaction terms were tested to see if gender or academic major had a moderation effect on the prediction of Career Indecisiveness Total by Emotional Intelligence Total.

Results for Research Question Three

What is the moderating effect of academic major on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?

PROCESS (Hayes, 2013) was used to investigate the interaction effect of academic major on the relationship between Emotional Intelligence Total (EIT) and Career Indecisiveness Total. In other words, I sought to discover if the prediction of Career Indecisiveness by EIT was different for students from the Colleges of Engineering versus Education. The regression equation tested the impact of the interaction between academic major and Emotional Intelligence Total on Career Indecisiveness Total. The entire regression model was significant, F (10,570) = 38.77, p =.00, accounting for 40% of the variance in Career Indecisiveness. However, the interaction term failed to explain significant variance in Career Indecisiveness Total beyond the controls, F (1,570) = .94, p = .33, accounting for just 0.01% of the additional variance.

Results for Research Question Four

What is the moderating effect of gender on the relationship between Emotional Intelligence Total and Career Indecisiveness Total?

PROCESS (Hayes, 2013) was used to investigate the interaction effect of gender on the relationship between Emotional Intelligence Total (EIT) and Career Indecisiveness Total. In other words, I sought to discover if the prediction of Career Indecisiveness by EIT was different for male versus female participants. The regression equation tested the impact of the interaction between gender and EIT on Career Indecisiveness Total. The entire regression model was significant, F (10, 571) = 38.54, p =.00 accounting for 40% of the variance in Career Indecisiveness. However, the interaction term failed to explain a significant proportion of variance in Career Indecisiveness beyond the controls, F (1, 571) = .15, p=. 70 accounting for just .002% of the additional variance.

Further Exploration on the Moderation Effect

The fact that no significant moderation effect was observed in the data was unexpected due to the existing evidence in the literature. In a study involving over 1721 male and female individuals, Petrides (2009) discovered that men scored significantly higher in the three dimensions of emotional intelligence including Emotionality, Self-Control, and Sociability than women. In another study, Sanchez-Ruiz, Perez-Gonzalez, and Petrides (2010) observed that social science students scored higher than technical students in Emotionality and there was a significant interaction effect between gender

and academic major, whereby female students scored higher than male students within the social sciences only.

Gender was also found to have a significant moderating effect on career decision-making difficulties in the previous studies. For instance, Di Fabio et al. (2013) investigated the roles of personality traits, career decision-making self-efficacy, perceived social support, and emotional intelligence in career indecision (developmental) and indecisiveness (chronic) in an Italian context. The results indicated that the prediction of both indecision and indecisiveness were stronger for women than men. In another study, Jiang (2016) examined the mechanism of the relationship between emotional intelligence and career decision-making self-efficacy and the moderating role of gender. The results suggested, "male students exhibited a stronger relationship between emotional intelligence and goal commitment compared with female students" (p. 30).

The unexpectedness of the obtained findings led me to further explore the moderation effect of gender and academic major on the relationship between emotional intelligence dimensions (Emotionality, Well-being, Sociability, and Self-Control), and career indecisiveness. The following exploratory research questions (ERQs) were developed:

EQR1. What is the three-way interaction effect of gender and academic major on the prediction of the Career Indecisiveness by Emotionality?

EQR2. What is the three-way interaction effect of gender and academic major on the prediction of the Career Indecisiveness by Well-being?

EQR3. What is the three-way interaction effect of gender and academic major on the prediction of the Career Indecisiveness by Sociability?

EQR4. What is the three-way interaction effect of gender and academic major on the prediction of the Career Indecisiveness by Self-Control?

To address whether the interaction effect of gender and academic major influenced the associations between the EI dimensions (Emotionality, Self-Control, Sociability and Well-being) and career indecisiveness, a moderation model was constructed using PROCESS (Hayes, 2013). In the moderation model, Career Indecisiveness Total was regressed on the predictor variables (Emotionality, Self-Control, Sociability and Well-being) and the moderator variable (Gender and Academic Major interaction term) as well as onto a multiplicative interaction term of the predictors and the moderator.

According to the results, there were no three-way interaction effects of gender and academic major on the prediction of Career Indecisiveness Total by Emotionality, Well-being, and Sociability. However, gender and academic major did have a significant three-way interaction effect on the prediction of the Career Indecisiveness Total by Self-Control. The entire regression model was significant accounting for 25% of the variance in Career Indecisiveness, $R^2 = .25$, F (7,606) = 33.11, $p = .00$. The three-way interaction term explained a significant proportion of variance in Career Indecisiveness Total, F (1,606) = 7.14, p=.00, accounting for 1% of the additional variance. This means that the magnitude of the moderation by sex on the effect of Self-Control on Career Indecisiveness Total depends on academic major. Simple slope analyses revealed that

among the College of Education students, the effect of Self-Control on Career Indecisiveness Total was not moderated by sex, *t* (606) = -.11, *p* = .91. However, among the engineering students, sex moderated the effect of Self-Control on Career Indecisiveness Total, t (606) = -4.53, *p* =. 00.

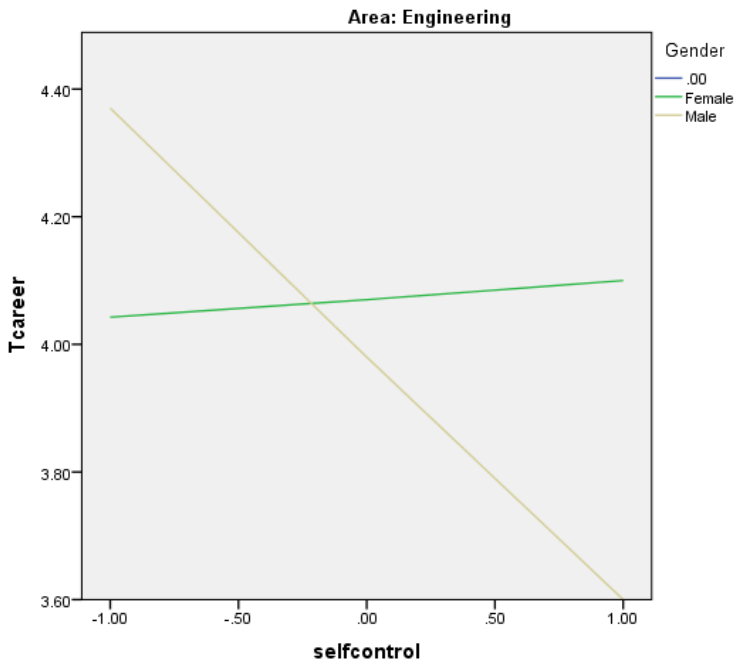

Figure 5. Visual Representation of the Conditional Effect of Self-Control on Career Indecisiveness Total (TCareer) as a Function of Gender and Academic Major.

The pattern of difference in the effect of Self-Control on Career Indecisiveness Total (TCareer) among men and women is different for the students in the College of Engineering. For men in engineering, the effect of Self-Control on Career Indecisiveness Total is in the expected negative direction (-.1941), and significantly different from zero,

t (573) = -12.54, p =. 00. In the case of women in engineering, the effect of Self-Control on Career Indecisiveness Total is not statistically significant, *t* (606) = -1.72, *p* = .08. A visual representation of this model can be found in Figure 5. As it can be seen, unlike for men, the effect of Self-Control on Career Indecisiveness Total is not different from 0 for women in engineering.

CHAPTER V

CONCLUSIONS

Summary of the Study

The purpose of this study was to examine the incremental validity of emotional intelligence in predicting career indecisiveness over and beyond the effect of the personality traits and positive and negative affect in a sample of male and female undergraduate students in the Colleges of Education and Engineering in a top tier research-one institution in Southwest, USA. It also explored the moderating effect of gender, academic major and their interaction on the ability of EI to predict career indecisiveness.

Data was collected from 582 participants. The sample was balanced for gender and academic major. Respondents were 46% male and 54% female. Forty-eight percent of the participants were in the College of Engineering and 52% came from the College of Education. Majority of the participants (93%) were between 18-21 years of age, 70% were white and 19% were Hispanic. African Americans (3.3%), Native Americans (.5%), Asians (6%), and other (2%) ethnicities were not well represented in the sample. A majority of the participants were sophomores (38%), juniors (28%), and seniors (33%) with very few freshman students (1.1%). The sample was comprised of mostly US citizens (98%). The crosstab results (Table 4) indicated that among the engineering students, 30% were female and 70% were male. This proportion was almost the opposite among the education major students where 75% were female and 25% were male.

Four instruments were used to collect data. *Trait Emotional Intelligence Questionnaire- Short Form* was used to measure emotional intelligence; *Emotional and Personality Career Decision- Making Difficulties Scale-Short Form* was used to measure career indecisiveness, *The Big Five Inventory* was used to measure the five personality traits and the *Positive and Negative Affect Scale* was used to measure affectivity. Emotional Intelligence Total score was the predictor, and Extraversion, Agreeableness, Conscientiousness, Openness to Experience, Neuroticism, Positive Affect and Negative Affect were the control variables. Career Indecisiveness Total, Pessimistic Views, Anxiety, and Self-Concept and Identity served as criterion variables. A series of multiple hierarchical regression analyses were conducted to answer the first two research questions. For the rest of the questions, which involved the moderation effect, PROCESS (Hayes, 2013) was used to analyze data. In this chapter, the obtained results for each research question will be discussed, implications for HRD research and practice will be identified and suggestions for future research will be offered.

Discussion

Results for Research Question One

Research question one asked if Emotional Intelligence Total had the ability to predict a significant proportion of variance in Career Indecisiveness Total after controlling for the effect of the personality traits and positive and negative affect. The results of a hierarchical regression analysis revealed that the answer to this question was positive. Personality traits and positive and negative affect together accounted for 36% of the variance in Career Indecisiveness Total. Beyond that, Emotional Intelligence

Total added about 4 % to the explained variance in Career Indecisiveness Total, which was statistically significant. The results indicated that students who had similar personality traits and same levels of positive and negative affect, were less likely to have career indecisiveness issues in general if they were more emotionally intelligent. The obtained results were expected based on the previous research findings on the links between career decisional difficulties and emotional intelligence (e.g., Di Fabio, Palazzeschi, & Bar-On, 2012; Di Fabio & Palazzeschi, 2009, Puffer, 2011, Di Fabio, et. al., 2013, Di Fabio & Saklofske, 2014).

The findings underlined the significance of emotional intelligence as a predictor of career indecisiveness over and beyond the personality traits. This was an important contribution in the EI literature as EI was repeatedly criticized for predicting very little over and above the existing personality scales (e.g., Conte, 2005; Locke, 2005). The findings clearly revealed that EI could predict a significant proportion of variance in career indecisiveness that could not be explained by personality traits and moods (positive and negative affect).

Career indecisiveness is characterized by experiencing high levels of fear about the process and outcome of career decision-making (Gai et al., 2010). Individuals with higher degrees of emotional intelligence are better at controlling negative emotions such as fear and are better able to confront the ambiguous stages and situations. The transition from school to the world of work is a significant change, and like any other change, it is associated with negative emotions, ambiguities and resistance. EI could facilitate the process of change by helping to regulate the flow of negative emotions and providing

individuals with an essential flexibility to encounter the new situation with a calm and positive outlook (Petrides, 2009).

In addition to experiencing fear, indecisive individuals have issues in developing a solid career identity and are not clear about their goals and preferences (Saka, Gati &Kelly, 2008). The way emotional intelligence affects decision-making in general is that it provides people with a clearer picture of the emotional consequences of making a choice or how it will make them feel in future (Petrides, 2009). Having faith in one's judgments is a product of adequate amounts of emotion perception (Petrides, 2009), which decreases the feelings of hesitation and self-doubt often experienced by indecisive individuals.

Emotional intelligence also helps individuals to expect positive things in life, identify and pursue new opportunities and take risks (Peterides, 2009). These qualities significantly matter at times of career decision-making as indecisive individuals often hold on to pessimistic views about the process of career decision-making, the world of work and their own capabilities in making a good choice (Gati et al., 2010). One other source of career indecisiveness is conflictual attachment to a significant other. It happens when the individual is experiencing feelings of guilt, anxiety and conflict towards a significant other because of excessive disagreement towards what is considered the best choice. Emotionally intelligent individuals can perceive and express emotions more accurately to develop and maintain close relationships. Ability in "communicating emotion-related thoughts … when it is when it is necessary" (Petrides, 2009, p. 59) is a skill observed in individuals with high levels of EI and can potentially prevent conflicts.

Results for Research Question Two

Research question two included three parts. The first part asked about the ability of EI in predicting a significant proportion of variance in career-related anxiety after controlling for the effect of the personality traits and positive and negative affect. According to the results, Emotional Intelligence Total added a significant amount, 0.7%, to the power of the regression model in explaining variance in career-related anxiety over and beyond the effect of personality traits and affectivity.

Career-related anxiety, is a situation that is characterized by experiencing a number of fears including fear of losing options, fear of failure, fear of making a wrong choice, fear of being in an undecided state, fear of one's responsibility, and fear of not fulfilling expectations in a chosen occupation. It also involves excessive perfectionism and low tolerance for ambiguity (Saka, Gati, & Kelly, 2008). Emotional intelligence could help with this situation in several ways. It enables an individual to control over the negative emotions such as fear and transform them to positive ones. Emotionally intelligent people are able to handle fear better, preventing it to dominate and paralyze action. Emotionally intelligent individuals act in spite of their fears, show higher levels of drive and persistence and are less likely to give up in the face of adversity (Petrides, 2009). These qualities could alleviate the amount of career-related anxiety experienced by the individuals and help them to reach and commit to better career decisions.

The second part asked about the ability of EI in predicting a significant proportion of variance in self-concept and identity issues in career decision- making after controlling for the effect of the personality traits and positive and negative affect.

According to the results, EI had an incremental validity in explaining a significant proportion of variance in self-concept and identity problems. It accounted for an additional 5% of variance over and beyond the effect of personality traits and positive and negative affect, which was significant. According to Saka, Gati, and Kelly (2008), Self-concept and identity difficulties involve issues with low self-esteem in career-related aspects of life, lack of consolidated career preferences and goals, trait anxiety and conflicts with a significant other regarding choosing a career or lack of support and feeling of guilt. It makes sense for emotionally intelligent individuals to face less of these difficulties as they have higher levels of self-esteem, emotion perception (perceiving one's emotions and that of others), emotion regulation (managing over one's emotions and that of others), and assertiveness.

According to Petrides (2009), lack of EI might result in one's inability to control and eliminate the feeling of guilt for favoring a career choice that is not approved by the significant other. Lack of emotion perception results in confusions about how one feels and the inability to decode the emotional weight associated with different career options. Lack of assertiveness, and regulating other's emotions could influence one's abilities in finding constructive ways to resolve conflicts about choosing a career with the significant other. Finally, holding a positive self-image and maintaining self-confidence in spite of hopeless conditions is another EI skill, which could impact the level of self-worth an individual attributes to himself or herself in the world of work.

The last part of this research question asked about the added value of EI in explaining a significant proportion of variance in having pessimistic views towards

career decision-making. According to the results, EI had an incremental validity in explaining a significant proportion of variance in pessimistic views. It accounted for an additional 5% of variance over and beyond the effect of the personality traits and positive and negative affect, which was significant. Developing pessimistic views over the process of career decision-making is mainly due to a lack of internal locus of control and career decision making self- efficacy.

Individuals with an external locus of control attribute the evets to external factors such as luck or destiny. Consequently, they tend to be less engaged in actively solving their problems and finding solutions. External locus of control "may lead to both indecision and indecisiveness because it reinforces the perception that it is not worth investing in the process" (Saka, Gati, & Kelly, 2008, p. 405). Thus, it creates pessimistic views towards the world of work. Career decision-making self-efficacy is referred to as "the expectation of success for specific career decision-making tasks" (Saka, Gati, & Kelly, 2008, p. 405). Lack of career decision-making self-efficacy can cause the individuals to avoid the challenging tasks of career decision-making process as a result of a pessimistic perception that they won't be successful anyway. Petrides (2009) believes that one of the consequences of lack of emotional intelligence is lack of faith in one's judgments and feeling of inferiority. Feeling of inferiority could negatively affect career decision-making self-efficacy, as the individual tends to believe that their investments on the job market would lead nowhere. Lack of self-efficacy limits the career options one could have as the individual falsely self-rejects himself or herself for certain occupations. Finally, lack of EI, is associated with negative expectations in life

and low self-regard (Petrides, 2009), which could explain the formation of pessimistic views towards the world of work and the process of choosing.

Results for Research Questions Three, Four and Five

The last three research questions were all centered on the moderation effect of academic major and gender on the relationship between Emotional Intelligence Total and Career Indecisiveness Total. In other words, they sought to discover if the nature of relationship between emotional intelligence and career indecisiveness was different for engineering versus education students (Research Question 3); for male versus female students (Research Question 4) and for male versus female students across engineering versus non-education fields (Research Question 5). No significant moderation effects were observed and the answers to all these questions were negative. The prediction of Career Indecisiveness Total by Emotional Intelligence Total was not a function of gender, academic major or the interaction of the two.

The results were unexpected considering a body of literature, which informed on significant differences between the performance of men and women on emotional intelligence (e.g. Petrides & Furnham, 2000; Petrides, 2009) and the performance of students across different academic majors on EI tests (e.g., Sanchez-Ruiz, et al, 2010). In addition some of the previous studies on the relationship between emotional intelligence and different aspects of career decision-making revealed significant gender differences (e.g. Jiang, 2016; Latalova & Pilarik, 2015; Di Fabio et al., 2013; Puffer, 2011). In spite of the existing literature, which supported the formulation of the moderation hypotheses, the collected data failed to support them. The unexpectedness of the results led the

researcher to further explore the moderation effect by investigating the moderating effect of gender and academic major interaction on predicting Career Indecisiveness Total by the four factors of emotional intelligence, including Emotionality, Sociability, Well-being and Self-Control.

Results for the Further Exploration on the Moderation Effect

According to the results of further explorations, gender and academic major had a significant three-way interaction effect on the prediction of the career indecisiveness by Self-Control. This significant interaction was not observed when emotional intelligence total was entered in the prediction equation as the predictor. The significant role of Self-Control could be well explained by looking at its components. Self-Control is an emotional intelligence dimension comprised of five factors, including: Emotion regulation, Stress management, Impulsiveness (low), Adaptability and Self-motivation (Petrides, 2009). These factors all play a meaningful role in the process of career decision-making process as they could assist the individual to manage the flow of negative emotions such as fear, deviate from the trap of anxiety, pessimistic views and low self-efficacy, staying positive and motivated despite the pressures and effectively manage the process of change associated with the transition from school to the world of work.

The prediction of career indecisiveness by Self-Control was a function of gender and academic major. In other words, for men in engineering, men in education, and women in education, a significant proportion of variance in career indecisiveness was predicted by Self-Control, which was expected. However, for women in engineering, the

prediction was not significant, meaning that the Self-Control dimension was not associated with lower levels of career indecisiveness difficulties.

The reason for the inability of EI to predict career indecisiveness among women in engineering might be related to the environment in which these students study and anticipate to work. According to a report by the *American Association of University Women (AAUW),* fewer girls choose STEM majors, and even if they chose STEM, they are much less likely than boys to graduate and pursue a career in STEM (Hill, Corbett, & Rose, 2010).

The literature documented several reasons for which a chilly environment has been created for female students of STEM majors. They include small number of female students in classes, stereotypical behaviors against women in STEM, gender-based discrimination, and the masculine image of engineers (Brainard, & Carlin, 1998; Good, Aronson, & Harder, 2008; Ohland, et al., 2008; Tyson, et al., 2007).

In addition to the school environment, the prospect of working as an engineer in organizations is threatening for women in many aspects. Simard et al. (2014) reported several barriers to women's advancement in technical corporations including tokenism, exclusion from social networks, lack of role models and mentors, work-life balance challenges, and finally organizational structures and policies, which are, not sex neutral. According to their study, women scientists and engineers face disappointment when they reach their mid-career. Despite their dedication to work, technical qualifications, and the extra pressure many of them tolerate as mothers and partners, they often tend to fall off

the advancement ladder as their male colleagues get promoted to the top managerial levels (Simard et al., 2014).

Surrounded by the unsupportive environment of the present as an engineering student and encountered by the gloomy perspective of the future as a technical employee, the female students of engineering in this study might have doubted their original decision of pursuing an engineering profession, beyond the level that could be possibly tackled by inner-strength capabilities such as emotional intelligence.

Conclusions

The aim of this study was to determine whether emotional intelligence would demonstrate incremental variance in explaining career indecisiveness beyond the variance accounted for by the personality traits and affectivity among American college students of education and engineering majors. It also explored the moderating effect of gender, academic major and their interaction on the ability of EI to predict career indecisiveness.

The results of the study revealed that emotional intelligence explained significant proportions of variance in career indecisiveness and its clusters (Pessimistic Views, Self-Concept and Identity and Anxiety) that were not explained by the personality traits and positive and negative affect. The results underlined the significance of emotional intelligence as a predictor of career indecisiveness over and beyond the rival predictors. This was an important contribution in the EI literature as EI was repeatedly criticized for predicting very little over and above the existing personality scales (e.g., Conte, 2005; Locke, 2005). The findings clearly revealed that EI could predict a significant proportion

of variance in career indecisiveness that could not be explained by personality traits and moods.

The impact of emotional intelligence on career decision-making could be explained through Fredrickson's (2001) *broaden- and-build theory of positive emotions*. Career decision-making is a cognitive process, which involves emotions. According to Fredrickson's theory, "certain discrete positive emotions… share the ability to broaden people's momentary thought- action repertoires and build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources" (Fredickson, 2001, p. 219). The broadening mechanism widens the range of thoughts and actions that come to mind and creates "the urge to explore, take in new information and experiences, and expand the self in the process" (Fredickson, 2001, p. 220).

Rational decision-making strategies are insufficient unless the individuals can act positively to the uncertainties, ambiguities and unpredictabilities involved in the process (Gelatt, 1989). Positive emotions also result into patterns of thought that are flexible, creative, open to information and efficient (Fredickson, 2001). These qualities are crucially important in the decision making process where flexibility towards options, creating possibilities for oneself, engagement in the process and efficiency are key to success. From the perspective of the *broaden- and-build theory of positive emotions*, positive emotions not only make individuals feel good but also are "vehicles for individual growth and social connection" (p.224).

The study also revealed that the prediction of career indecisiveness by one of the EI dimensions, Self-Control, was a function of gender and academic major. While for men in engineering, men in education, and women in education, a significant proportion of variance in career indecisiveness was predicted by Self-Control, for women in engineering, the prediction was not significant. The inability of EI to predict career indecisiveness among women in engineering might be related to the chilly environment in which these students study and anticipate to work. Surrounded by the unsupportive environment of the present as an engineering student and encountered by the gloomy perspective of the future as a technical employee, the female students of engineering might have doubted their original decision of pursuing an engineering profession, beyond the level that could be possibly tackled by inner-strength capabilities such as emotional intelligence.

Implications for Practice

The study has important implications for career counselors. It can assist career counselors to suggest appropriate interventions. If a client is diagnosed with career indecisiveness, their problems cannot be resolved through typical consultations offering information on different possible career paths and decision-making strategies (Gati & Levin, 2014). Interventions focused on emotions need to be incorporated, one of which could be emotional intelligence training.

A body of empirical research demonstrated that emotional intelligence can be taught and learned through appropriate training (e.g., Caruso & Wolfe, 2001; Elias, Hunter, & Kress, 2001; Goleman, 1995). Based on the significant role of EI in

predicting career indecisiveness, well-designed EI interventions might fix career indecisiveness issues. There is at least one study in the literature demonstrating that a training program for enhancing emotional intelligence could reduce both career indecision and indecisiveness (Di Fabio & Kenny, 2010). Therefore, EI has a promise to assist individuals in the transition from the state of bewilderment, self-doubts, anxiety and pessimistic views towards the ability of making better career decisions leading to long-lasting satisfaction in personal and professional lives.

This study also has significant implications for HRD practice. HRD advocates for maximizing adults' productivity and satisfaction for the good of the individuals and the organization (McLean & McLean, 2001). Supporting women in organizations is well adjusted with the mission of the HRD.. As McDonals and Hite (1998) noted:

> Women have made progress in the past two decades, but the glass ceiling remains, and organizations need alternative approaches if they are going to maximize their full workforce potential. HRD, by the nature of its function within organizations, is positioned to lead new initiatives for change, including mentoring, training, career planning, and informal learning (p. 55).

The barriers that exist to the advancement of women in organizations discourage young women to pursue a career in STEM. HRD interventions that could support the career development of women in technical firms may include: Creating professional development opportunities for all technical employees, offering leadership development workshops, increasing company awareness about diversity in communication styles, providing mentoring opportunities for anyone who needs it, incorporating flex time

strategies, increasing women's presentations at the company's Board of Directors and diversifying pathways for advancement to the highest ranks are recommended (Simard et al., 2014).

Within the STEM colleges, the recruitment, retention and success of female students could be further facilitated through establishing a culture of acceptance, integration and equity in the departments (Margolis &Fisher, 2002). Raising awareness of implicit gender-science biases; acknowledging and highlighting women's achievements' in math and science; promoting a growth mindset environment in which male and female students believe that anyone can develop and improve; and teaching professors about the stereotype threat, are among the strategies which could create a more supportive environment for women to develop and flourish in STEM fields (Hill, Corbett, & Rose, 2010).

Research Limitations and Delimitations

Limitations

Although the results of this study appear to be promising with regards to the significant role of emotional intelligence in career indecisiveness, some limitations exist. First, while career indecisiveness might be a concern for a wide variety of individuals (e.g. high school students, university students, employees), this study focused only on the undergraduate university students at a research one university in Southwest United States. Therefore, the generalizability of the results is limited to a particular context and population. Second, the measurement tools used in this study were all self-report. When using self-report tests, the accuracy of the findings is dependent on the participants'

honesty and might be contaminated by their tendency to social desirability. This bias was minimized though to the extent possible by assuring the participants that the survey was anonymous. Third, the nature of career decision-making processes is dynamic and can change at any point in time. The data from the respondents will be given at a specific point in time (snapshot) so it cannot represent the continuous career decision-making process.

Delimitations

Career decision-making difficulties have several taxonomies and scales (Gati, et. al, 1996). This study is focused on career indecisiveness and the factors underlying it as identified by the *Emotional and Personality related Career Decision-making Difficulties (EPCD)* taxonomy and does not intend to examine the developmental career decision-making difficulties. Similarly, emotional intelligence has different models and measurement tools. This study is focused on *trait emotional intelligence* (Petrides & Furnham, 2001), which is an integrated conceptualization of some of the mixed models of EI. Should the researcher have used a different model such as Salovey and Mayer's *MSCEIT*, the results could have been different. Finally, the present study demonstrated an association between emotional intelligence and career indecisiveness and conveys no causality. Determining whether emotional intelligence could result in decreasing career indecisiveness should be investigated through experimental designs.

Suggestions for Future Research

Based on the obtained results, limitations, and delimitations of this study, the following recommendations are made for the future research:

- Replicating the study with different EI models, especially the ability EI, to see if the results remain consistent;
- Replicating the study using different samples to see if the results have generalizability;
- Examining other potential predictors of career indecisiveness such as cognitive intelligence, and resilience;
- Examining the role of ethnicity in the predicting career indecisiveness/ indecision by emotional intelligence;
- Investigating if female students of STEM are less decisive/decided than their male classmates in pursuing a career in STEM and exploring the underlying factors through qualitative research and finally;
- Determining if emotional intelligence training could decrease career indecision/ indecisiveness difficulties through experimental designs.

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APPENDIX A

Determining the Minimum Sample Size

XLSTAT 2010.6.01 - Power - Linear regression - on 30/03/2015 at 15:18:25
Goal: Find the sample size
Tests: R^2 different from 0
Determine effect size: Effect size
Inputs:

Parameters	Inputs
Number of tested predictors:	15

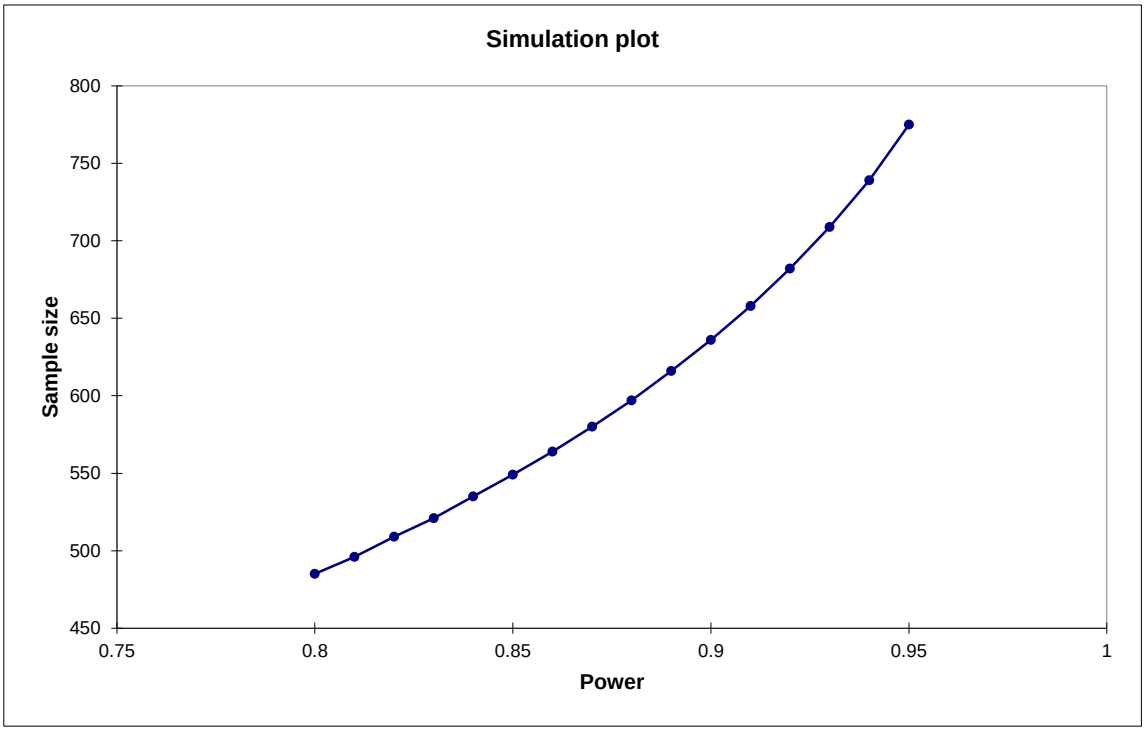
Results:

Parameters	Results
Power	0.8
alpha	0.05
Effect size	0.02
Sample size	**500**
Power (obtained)	0.800

Test Interpretation:
H0: The R^2 is equal to 0.
Ha: The R^2 is different from 0.
The risk to not reject the null hypothesis H0 while it is false is 0,1.
Results (Simulation plot):

Power	Sample size
0.800	485
0.810	496
0.820	509
0.830	521
0.840	535
0.850	549
0.860	564
0.870	580
0.880	597
0.890	616
0.900	636
0.910	658
0.920	682
0.930	709
0.940	739
0.950	775

Simulation plot:



APPENDIX B

Trait Emotional Intelligence Questionnaire- Short Form (TEIQue-SF)

Instructions: Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible responses to each statement ranging from 'Completely Disagree' (number 1) to 'Completely Agree' (number 7).

1 (Completely Disagree) ….. 2 ….. 3 ….. 4 ….. 5 ….. 6 ….. 7 (Completely Agree)

1. Expressing my emotions with words is not a problem for me.	1 2 3 4 5 6 7
2. I often find it difficult to see things from another person's viewpoint.	1 2 3 4 5 6 7
3. On the whole, I'm a highly motivated person.	1 2 3 4 5 6 7
4. I usually find it difficult to regulate my emotions.	1 2 3 4 5 6 7
5. I generally don't find life enjoyable.	1 2 3 4 5 6 7
6. I can deal effectively with people.	1 2 3 4 5 6 7
7. I tend to change my mind frequently.	1 2 3 4 5 6 7
8. Many times, I can't figure out what emotion I'm feeling.	1 2 3 4 5 6 7
9. I feel that I have a number of good qualities.	1 2 3 4 5 6 7
10. I often find it difficult to stand up for my rights.	1 2 3 4 5 6 7
11. I'm usually able to influence the way other people feel.	1 2 3 4 5 6 7
12. On the whole, I have a gloomy perspective on most things.	1 2 3 4 5 6 7
13. Those close to me often complain that I don't treat them right.	1 2 3 4 5 6 7
14. I often find it difficult to adjust my life according to the circumstances.	1 2 3 4 5 6 7
15. On the whole, I'm able to deal with stress.	1 2 3 4 5 6 7
16. I often find it difficult to show my affection to those close to me.	1 2 3 4 5 6 7

17. I'm normally able to "get into someone's shoes" and experience their emotions. 1 2 3 4 5 6 7

18. I normally find it difficult to keep myself motivated. 1 2 3 4 5 6 7

19. I'm usually able to find ways to control my emotions when I want to. 1 2 3 4 5 6 7

20. On the whole, I'm pleased with my life. 1 2 3 4 5 6 7

21. I would describe myself as a good negotiator. 1 2 3 4 5 6 7

22. I tend to get involved in things I later wish I could get out of. 1 2 3 4 5 6 7

23. I often pause and think about my feelings. 1 2 3 4 5 6 7

24. I believe I'm full of personal strengths. 1 2 3 4 5 6 7

25. I tend to "back down" even if I know I'm right. 1 2 3 4 5 6 7

26. I don't seem to have any power at all over other people's feelings. 1 2 3 4 5 6 7

27. I generally believe that things will work out fine in my life. 1 2 3 4 5 6 7

28. I find it difficult to bond well even with those close to me. 1 2 3 4 5 6 7

29. Generally, I'm able to adapt to new environments. 1 2 3 4 5 6 7

30. Others admire me for being relaxed. 1 2 3 4 5 6 7

APPENDIX C

Emotional and Personality-Related Career Decision-Making Difficulties (EPCD)

Have you considered what field you would like to major in or what occupation you would like to choose?

Yes / No

If so, to what extent are you confident of your choice?

Not confident at all 1 2 3 4 5 6 7 8 9 Very confident

Next, you will be presented with a list of statements concerning the career decision-making process. Please rate the degree to which each statement applies to you on the following scale:

Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

Circle 1 if you strongly disagree with the statement and 9 if you strongly agree with it. Of course, you may also circle any of the intermediate levels.

Please circle the number, which best represents the degree to which you agree with each statement. Please do not skip any question.

1. Recently I have been thinking about choosing a career.
   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

2. I can't find out enough about all the occupations to make the right choice.
   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

3. I can't take all the relevant considerations into account when choosing a career.
   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

4. Few careers are really interesting.
   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree
5. In most careers you do not get fair compensation for your investment.
   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

6. Choosing the right career mainly depends on luck.
   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

7.
8. I have very little influence over the career I will finally have.
   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

9. I am satisfied when something good happens to me.
   Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

10. I am worried about having to deal with the complex process involved in career decision-making.
    Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

11. I am worried about the decision-making process because I want to make sure I consider all relevant factors.
    Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

12. I am worried about choosing a course of study or a career because it might cause many changes in my life.
    Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

13. Choosing a career is not a clear-cut decision, so I am worried that unpredictable things might happen.
    Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

14. I am afraid I might make a mistake in my career decision, and not choose the right career for me.
    Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

15. I am afraid to commit to a career because I might regret this choice later, and feel responsible for the mistake.
    Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

16. I am already considering a certain career, but am afraid that it might not suit my skills.
    Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

17. I am already considering a certain career, but am afraid it might not suit my personality.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

18. I don't mind whether my expectations are realized or not.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

19. I often worry about many things in life.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

20. I often find it difficult to get rid of worries or disturbing thoughts.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

21. I often feel that I am unsuccessful.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

22. I often feel inferior to others.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

23. I still do not know what my vocational interests are.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

24. I still do not understand myself enough to know which career is best for me.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

25. Important people in my life are often displeased with the things that interest me.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

26. I need approval for my choices from important people in my life.
Strongly disagree 1 2 3 4 5 6 7 8 9 Strongly agree

APPENDIX D

Demographic Information Questionnaire

Please answer the following questions by choosing the best answer.

1. What is your gender? □Female □Male
2. What is your age? □12-17 □18-24 □25-34 □35-or older
3. You are a ..... student. □Freshman □Sophomore □Junior □Senior □Graduate
4. What is your ethnicity?

   □White □Hispanic or Latino □Black or African American □Native American or American Indian □Asian/Pacific Islander □Other
5. What is your citizenship/ residence status? □US □International
6. Please Specify your major:----------

APPENDIX E

Big Five Inventory (BFI)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

1 Disagree Strongly	**2** Disagree a little	**3** Neither agree nor disagree	**4** Agree a little	**5** Agree strongly

I am someone who…

1. _____ Is talkative
2. _____ Tends to find fault with others
3. _____ Does a thorough job
4. _____ Is depressed, blue
5. _____ Is original, comes up with new ideas
6. _____ Is reserved
7. _____ Is helpful and unselfish with others
8. _____ Can be somewhat careless
9. _____ Is relaxed, handles stress well.
10. _____ Is curious about many different things
11. _____ Is full of energy
12. _____ Starts quarrels with others
13. _____ Is a reliable worker
14. _____ Can be tense

15. _____ Is ingenious, a deep thinker

16. _____ Generates a lot of enthusiasm

17. _____ Has a forgiving nature

18. _____ Tends to be disorganized

19. _____ Worries a lot

20. _____ Has an active imagination

21. _____ Tends to be quiet

22. _____ Is generally trusting

23. _____ Tends to be lazy

24. _____ Is emotionally stable, not easily upset

25. _____ Is inventive

26. _____ Has an assertive personality

27. _____ Can be cold and aloof

28. _____ Perseveres until the task is finished

29. _____ Can be moody

30. _____ Values artistic, aesthetic experiences

31. _____ Is sometimes shy, inhibited

32. _____ Is considerate and kind to almost everyone

33. _____ Does things efficiently

34. _____ Remains calm in tense situations

35. _____ Prefers work that is routine

36. _____ Is outgoing, sociable

37. _____ Is sometimes rude to others

38. _____ Makes plans and follows through with them

39. _____ Gets nervous easily

40. _____ Likes to reflect, play with ideas

41. _____ Has few artistic interests

42. _____ Likes to cooperate with others

43. _____ Is easily distracted

44. _____ Is sophisticated in art, music, or literature

APPENDIX F

Positive and Negative Scale: PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt like this in the past few days. Use the following scale to record your answers.

Very slightly or not at all	a little	moderately	quite a bit	extremely
1	2	3	4	5

Interested _____
Distressed _____
Excited _____
Upset _____
Strong _____
Guilty _____
Scared _____
Hostile _____
Enthusiastic _____
Proud _____

Irritable _____
Alert _____
Ashamed _____
Inspired _____
Nervous _____
Determined _____
Attentive _____
Jittery _____
Active _____
Afraid _____

The 10 items for POSITIVE (PA) affect are:
attentive, interested, alert, excited, enthusiastic, inspired, proud, determined, strong and active.
The 10 items for NEGATIVE (NA) affect are*:*
distressed, upset, hostile, irritable, scared, afraid, ashamed, guilty and nervous, jittery.

APPENDIX G

Invitation Letter to the Potential Participants

Howdy!

You're invited to be a participant in an exciting study which evaluates your emotional intelligence skills, positive and negative affect, personality type and career decision – making

What is this research about?

This research is on the impact of emotional intelligence, personality traits and moods on career decision making among undergraduate university students. Emotional Intelligence is comprised of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express our emotions, understand others' emotions and relate with them, and cope with daily demands. This study seeks to find out if and to what extent emotional intelligence skills, personality traits, and moods can predict career decision-making difficulties among the undergraduate students across various majors.

What Will I Be Asked To Do In This Study?

You will be asked to answer a survey which measures your emotional intelligence, personality types, moods, and career decision-making difficulties. They are also questions which ask for your age, gender, major, year in the program, ethnicity and country of citizenship. The survey takes about 15-20 minutes of your time and it is pretty easy to follow. It basically asks the level you agree or disagree with some statements. No follow-up information will be required. Any identifying information about you that is collected and all of your responses will remain confidential.

Who can participate?

The study is open to all **undergraduate** students in Colleges of Education and Engineering. Participation is voluntary.

How Can I Participate?

Please click on this link which leads you to the survey:
https://tamucehd.qualtrics.com//SE/?SID=SV_8HdAYNBagnFT7y5

Questions about this study? Contact Forouzan Farnia at forouzanfarnia@tamu.edu

IRB NUMBER: IRB2015-0411D
IRB APPROVAL DATE: 06/30/2015
IRB EXPIRATION DATE: 06/15/2016

APPENDIX H

IRB Approval

DIVISION OF RESEARCH

TEXAS A&M UNIVERSITY

DATE: June 30, 2015

MEMORANDUM

TO: Fredrick Nafukho
TAMU - College Of Education - Educational Adm & Human Resource Develop

FROM: Dr. James Fluckey
Chair
TAMU IRB

SUBJECT: Expedited Approval

Study Number: IRB2015-0411D

Title: THE IMPACT OF EMOTIONAL INTELLIGENCE ON CAREER DECISION-MAKING AMONG UNDERGRADUATE UNIVERSITY STUDENTS

Approval Date: 06/30/2015

Continuing Review Due: 05/15/2016

Expiration Date: 06/15/2016

Documents Reviewed and Approved: Only IRB-stamped approved versions of study materials (e.g., consent forms, recruitment materials, and questionnaires) can be distributed to human participants. Please log into iRIS to download the stamped, approved version of all study materials. If you are unable to locate the stamped version in iRIS, please contact the iRIS Support Team at 979.845.4969 or the IRB liaison assigned to your area.

Submission Components			
Study Document			
Title	Version Number	Version Date	Outcome
Forouzan Farnia Proposal	Version 1.0	06/26/2015	Approved
Survey	Version 1.0	06/14/2015	Approved
Howdy	Version 1.0	06/14/2015	Approved
Form - Waiver of Consent or Documentation 09-01-11	Version 1.0	06/14/2015	Approved
Information Sheet	Version 1.0	06/17/2015	Approved

Document of Consent: Waiver approved under 45 CFR 46.117 (c) 1 or 2/ 21 CFR 56.109 (c)1

Comments: This study has been approved.

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